Bentley **F133**

INSTALLATION
MANUAL

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3 ZONE ALARM

The F133 security control panel offers to the installer a wide range of programmed options, which permits a security system to be tailored to suit most requirements.

Upon delivery the unit will have the SYSTEM VARIABLES and SYSTEM OPTIONS programmed in as factory settings and will work in a conventional manner. The programmable parameters and their factory settings are listed in the Engineering Programming section of this manual. Links are fitted to all the loops to assist with commissioning, these will be removed as each detection loop is verified. Note that the tamper switch causes a tamper fault when working on the panel with the lid open.

To change the system variables and options the installer must gain access to the ENGINEER PROGRAMMING mode by entering the 4 digit engineer keycode – confirmed by all the L.E.D's illuminating. The parameters may now be changed according to the simple programming procedure. Once programmed the F133 holds the new values in a non volatile memory and will return to it even if the system is left in a powered down state. Should you wish to clear the memory and return it to the factory settings the F133 should be powered up whilst pressing the zero key.

GETTING STARTED
COMMISSIONING THE F133 CONTROL PANELS

The following checklist is intended to help first time users install a F133

1. Do not connect any installation wiring to the terminal strip. The panel is supplied with shorting links fitted to all zone loops, tamper, P.A. and the bell tamper (C & D terminals).

2. Switch on the mains supply.

3. An immediate full tamper alarm will be generated which can be cleared by pressing <1> <2> <3> <4>. The internal tamper sound will continue and is cancelled by pressing <1> <2> <3> <4> <ON> <OFF>. Note that the <ON> & <OFF> refer to pressing the green key twice. This is the same as turning a keyswitch on and then off to clear a 24 hour fault. Tape down the tamper spring and press <0> <0> <0> <0> to reset the panel. Press <1> <2> <3> <4> <ON> and check that there is a continuous exit tone. Press <OFF> to cancel.

4. Refer to the section ENGINEERING PROGRAMMING on page 10. Enter the programming mode:-
<2> <5> <8> <0>
All the LED's on the front panel illuminate to confirm that you are in the programming mode.

EDITING
To change a parameter from the factory value enter the 2 digit op-code followed by the new value. Repeat this process until you have modified all the required functions.

Note that the programmable functions fall into two categories as listed on page 11 of the installation manual. SYSTEM VARIABLES require the entry of one or more decimal digits from the keypad. SYSTEM OPTIONS require the entry of either a "1" or a "0", and has the same effect as switching an option switch on and off respectively.

Whilst editing op-code 18 (Night Set Suite), their status will be displayed on the red zone LED's. Pressing the appropriate digit on the keypad will select a nightset zone, pressing the same number again will "switch off" the same.

PROGRAMMING

If you are confident that all is O.K. press <DESELECT>, all your edited codes are transferred to the non-volatile memory where it is retained, even when power is removed from the board.

If you get in a complete mess eg. an unknown engineer code unwittingly programmed then remove the power and re-apply the power with your finger on the "0" key.

Every parameter will now revert back to the factory code settings.

5. Exercise the panel, removing zone links etc. until you are satisfied that your programming is O.K.
6. Remove mains power from the panel.

7. Remove the zone links one by one, replacing each with the installation wiring. Leave links in unused zones. Consult the centre-fold wiring diagram of the Installation Manual.

8. Switch on the mains power and connect the battery, observing polarity.

9. Remove the tape from the tamper spring. This panel will once again tamper. Clear as described in section 3 above.

10. Close and secure the lid. Press <0> <0> <0> <0> to reset the system. All LED's flash, confirming that a reset is in progress.

FUNCTIONAL DESCRIPTION

SETTING
The F133 control panel has two setting modes:-

1. **TIMED EXIT**
This is the factory setting and the exit time is pre-set to 30 seconds. The time is adjustable from 0 to 99 seconds. Straying off the exit route causes a loud internal siren and restarts the exit timer. The FINAL EXIT DOOR loop MUST be configured as the last zone along the exit route, when leaving the premises.

2. **SET ON FINAL DOOR CLOSURE**
The final exit door contact must be connected to the FINAL EXIT loop and system option 22 must be programmed to a 1. Upon final exit door closure there is a 2 second delay before the system finally sets.
NOTE: A PIR situated in the Exit Route may cause an audible fault warning when the Final Exit Door loop is closed. The system will still set and the audible warning cease when the PIR settles.

EXIT ROUTE
The F133 is supplied with one Exit Route zone. This zone causes no alarm during the exit procedure. Straying into a protected zone causes a loud internal siren only, which may prove useful for walk testing the installation.

On re-entry there is no alarm providing the Final Exit door was opened first. Straying off the Exit Route will cause an instant alarm condition.

NIGHT SET
Primarily intended for setting the control panel when retiring to bed. Night set over-rides Final Door Closure setting mode and forces timed exit with a low level buzz tone. Any zones programmed into the Night Set Suite (system variable 18) are automatically deselected. Entry is initiated by tripping an Exit Route Zone, or by opening the Final Exit Door.

AUTO RESET
Following an alarm during a set period the system automatically resets when the bell timer times out. All loops still in fault condition are automatically deselected, those that have cleared are re-armed.
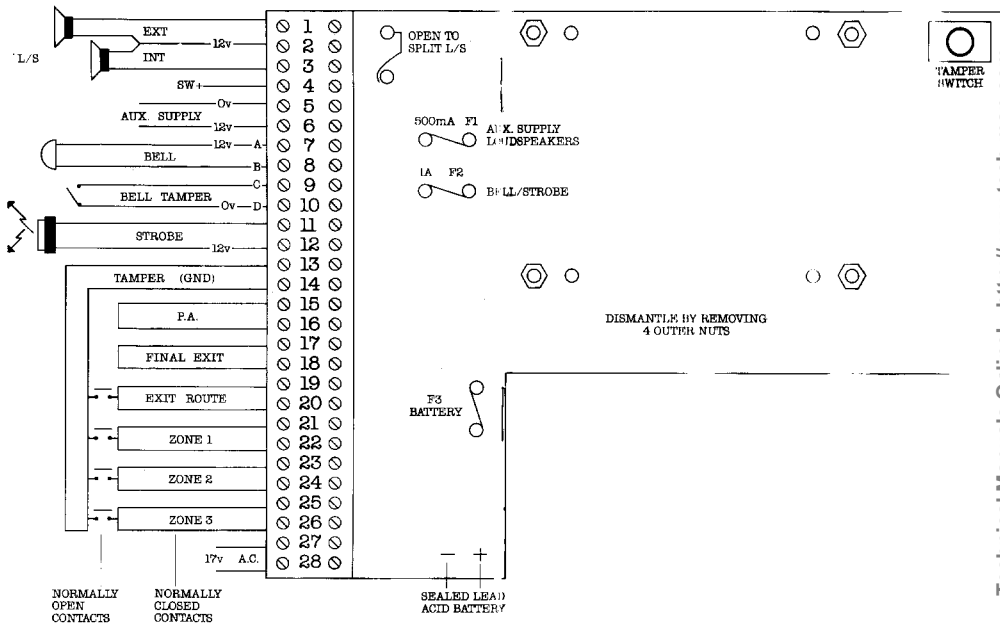
When engineer option 21 is programmed to a 1 any zone that has been violated is automatically deselected when the system auto-resets. This option would be selected to prevent repeat false alarms.

The number of alarm activations within a set period is factory set to 9.

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EXT

L/S

INT

— 12v —

SW +

— 0v —

AUX. SUPPLY

— 12v —

— 12v — A —

BELL

— B —

— C —

BELL TAMPER

— 0v — D —

STROBE

— 12v —

TAMPER (GND)

P.A.

FINAL EXIT

EXIT ROUTE

ZONE 1

ZONE 2

ZONE 3

17v A.C.

○ 1 ○
○ 2 ○
○ 3 ○
○ 4 ○
○ 5 ○
○ 6 ○
○ 7 ○
○ 8 ○
○ 9 ○
○ 10 ○
○ 11 ○
○ 12 ○
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○ 26 ○
○ 27 ○
○ 28 ○

OPEN TO
SPLIT L/S

500mA F1   AUX. SUPPLY
○——○   LOUDSPEAKERS

1A F2
○——○   BELL/STROBE

F3
BATTERY

TAMPER
SWITCH

DISMANTLE BY REMOVING
4 OUTER NUTS

— +

SEALED LEAD
ACID BATTERY

NORMALLY
OPEN
CONTACTS

NORMALLY
CLOSED
CONTACTS

6

7

LOUDSPEAKERS

Two loudspeaker channels permit differentiation between soft comfort tones and loud siren alarms.

EXT (LOUD)	INT (QUIET)
Alarm Siren	Fault
Tamper	Keypad blip
Walk Test	Exit
Exit (Option 34=1)	Entry
Entry (Option 34=1)	

The F133 is factory supplied with the loudspeaker "L/S SPLIT" link closed and delivers both loud and soft sounds into a single speaker housed in the panel. For installations demanding an internal siren situated away from the control panel then the "L/S SPLIT" link is opened and the remote loudspeaker connected between the EXT and 12V terminals. The loudspeaker in the control panel must now be connected between the INT and 12V terminals.

Exit and Entry tones can be emitted via the loud EXT terminal by programming option 34 to a 1. Any combination of loudspeakers can be connected to the 'EXT' terminal providing the nominal impedance is greater than 4 ohms. The loudspeaker 12 volt supply is fused at 1 Amp (a low volume sound is still emitted if the fuse blows.)

ALARM OUTPUTS

A Self Actuating Bell module (code 1410) can be fitted to the A, B, C and D terminals.

The bell time is factory set to 20 minutes but is adjustable from 1 minute up to 99 minutes. The strobe output has an automatic 12 hour cut-off.

The bell and strobe supply terminals have a common fuse rating of 1 Amp.

L.E.D. DISPLAY

POWER : A continuously illuminated POWER L.E.D. indicates that the primary mains power supply is O.K. During a SET period a power fault creates full alarm condition. The POWER L.E.D. is blanked when the system is SET.

RESET : A continuously illuminated RESET L.E.D. indicates that a reset is required by the customer.

ON : The ON L.E.D. serves as a visual confirmation of successful keypad operation. It is continuously illuminated during the exit and entry procedures.

ZONES : Following an alarm condition, the control panel will display one or more of the zone status L.E.D's in the following modes:

Blink : First to alarm in an alarm cycle.

Continuous : Secondary zones entered during an alarm cycle.

Slow Flash : Zones deselected at switch on.

KEYPAD OPERATION

The 4 digit keycodes may consist of any combination of numerical digits. There are two extra 'invisible' keys situated either side of zero which may also be incorporated into the KEYCODE. In total there are over 20,000 unique 4 digit KEYCODES. A Duress/P.A. alarm is triggered by entering the customer KEYCODE in reverse order. For this reason the KEYCODE cannot be a palindrome (i.e. the same backwards as forwards).

To limit attempts at code breaking a 10 second fault warning is generated after 20 key presses. When the system is set a full tamper alarm is generated.

When programming zonal attributes (deselection op-code 18) the keys have a sequential on/off action, the result of which is visually indicated by the corresponding L.E.D.

ZONE DESELECTION

The customer may deselect any zone including Exit Routes and the Final Exit Door loop, with the exception of P.A. and Tamper. Night Setting automatically deselects any zone previously programmed into the Night Set Suite, by the installation engineer (system variable 18).

Note that when deselecting zones the keys have a sequential on/off action.

SWITCHED POSITIVE TERMINAL

As supplied from the factory the switched positive output switches from 12 volts when the system finally sets, and clears on re-entry. The output is also switched high for 2 seconds during a reset to clear the latching function of the detectors. Some latching detectors require a switched positive control signal when the system is in alarm condition, and cleared upon Reset. In this case programme engineer option 20 to a 1.

ENGINEER PROGRAMMING

1 Enter [4 DIGIT ENGINEER CODE] to access ENGINEER PROGRAMMING mode.

2. Enter [2 DIGIT OP-CODE] [NEW VALUE/S] [ON]

3. Repeat step 2 on all variables and options you may wish to change.

4. Enter [DESELECT] to terminate ENGINEER PROGRAMMING mode and update the memory.

EXAMPLE PROGRAMMING SESSION

1.	[2 5 8 0]		ENGINEER PROGRAMMING MODE
2.	[10] [3 0 9 9]	[ON]	NEW CUSTOMER KEYCODE
3.	[11] [2 9 2 5]	[ON]	NEW ENGINEER KEYCODE
4.	[18] [34]	[ON]	ZONES 3 & 4 DESELECTED ON NIGHTSET
5.	[22] [1]	[ON]	SET ON FINAL DOOR CLOSURE
6.	DESELECT		ESCAPE FROM PROGRAMMING MODE

NOTE: If you think you have miskeyed then escape by pressing [DESELECT] and start again.

To revert all codes back to factory setting remove all power from the P.C.B. Then with the ZERO KEY pressed RECONNECT THE SUPPLY.

CUSTOMER KEYCODE PROGRAMMING

The customer can change his 4 digit code as follows:-

1. Enter [OLD 4 DIGIT KEYCODE]

2. Enter [9 9 9 9] .... All L.E.D.'s illuminated.

3. Enter [NEW 4 DIGIT KEYCODE]

4. Enter [ON] .... New keycode stored in memory.

CAUTION: Any forgotten keycodes may result in an engineer call-out.

ENGINEER PROGRAMMING FORM

SYSTEM VARIABLES

OP-CODE	DESCRIPTION	FACTORY VALUE	VALUE RANGE	NEW VALUE
10	CUSTOMER KEYCODE	1 2 3 4	4 DIGITS 0-9	
11	ENGINEER KEYCODE	2 5 8 0	4 DIGITS 0-9	4 0 6 2
12	EXIT TIME	30 SECONDS	00-99 SECONDS	3o
13	ENTRY TIME	30 SECONDS	00-99 SECONDS	5o
15	BELL ON TIME	20 MINUTES	1-99 MINUTES	
18	NIGHT SET SUITE	NONE	ZONES 1 - 6	

SYSTEM OPTIONS

OP-CODE	FACTORY VALUE = 0	OPTION VALUE = 1	NEW VALUE
20	SWITCHED +'VE FINAL SET	SWITCHED +'VE ON ALARM	
21	REARM IF ZONE CLEARED	AUTO RESET DESELECT	
22	TIMED EXIT	SET ON FINAL DOOR CLOSURE	
23	CUSTOMER RESET	ENGINEER RESET	
31	DAY TAMPER INT. SOUNDER	DAY TAMPER INT. & EXT.	
34	EXIT/ENTRY TONES SOFT	EXIT/ENTRY TONES LOUD	

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