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INTRODUCTION

The HARRIER is a 7 sector + 1 dedicated 24 hour tamper circuit intruder alarm control unit with the following functions and features.

- Personal Setting/Unsetting
- Remote locking of doors and operation of lights
- Full set
- Part set
- Sentinel zones
- Priority zones
- 24 hour zones
- Retriggerable zones
- Operator codes + engineer code
- Temporary isolation of zones
- Walk set
- Review of previous alarmed zones
- Multiple entry points
- Exit delay
- Entry delay
- Alarm time
- Quick set
- Remote keypad control
- Non volatile memory
- Remote Communication

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OPERATION OF THE HARRIER

2.1 General

Two versions of the HARRIER are available - HARRIER II and HARRIER IV.

The HARRIER II utilises a radio pendant transmitter to SET/PART SET the system and provide duress signalling. The HARRIER IV pendant facilitates the same functions plus two other outputs which can initiate ancillary functions such as locking/unlocking doors or operating lights. The SET/PART SET functions and DURESS signalling may also be accessed using the AC57 keypad.

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Communication to monitoring stations is undertaken using the Ademco High Speed format, transmitting the event plus qualifier i.e. alarm condition plus zone number, etc. Standard values for the format are transmitted for each function.

Further details are available upon request.

2.2 Siting the Harrier

In most instances the HARRIER will not need a site survey to check the range of the pendant(s). However a survey should be undertaken when repeatable operation of the pendant(s) at the specified maximum range (20 M) is required, or the building is constructed of reinforced concrete, uses foil backed wall or floor lining, or is of steel framed construction.

Care should be taken to observe the following concerning the HARRIER.

- i) where possible the HARRIER should be positioned as close as possible to the normal entry/exit route to the premises.
- ii) Position the control box at least 1 metre from large metal objects such as roofing materials and including wiring, especially running vertically.
- iii) Preferably position at a height of approximately 1.5 metres from ground level.
- iv) Never install the control box below ground level.
- v) Do not install the HARRIER beside potential sources of RF such as computers, televisions, radio transmitting equipment.

2.3 AC50/51 Pendant Transmitters

The pendants come in two versions AC50 and AC51. The AC50 is compatible with the HARRIER II and the AC51 with the HARRIER IV.

They come ex factory already coded and can only be used with the control cabinet with which they are supplied.

Encoding the control cabinet to a changed pendant is undertaken by setting the dip switch, located adjacent to the aerial input, the same as

the pendant code which is displayed on the inside of the pendant back cover. This may be accessed by removing the two screws on the rear.

NOTE: When the HARRIER is SET/UNSET using a pendant transmitter the PS output operates providing a facility to indicate these operations when the HARRIER is operated by a pendant — (see Outputs (PS), page 5, and Wiring diagram, page 6)

2.4 AC57 Keypad

The HARRIER is programmed using the AC57 remote keypad which may or may not be a permanent part of the system.

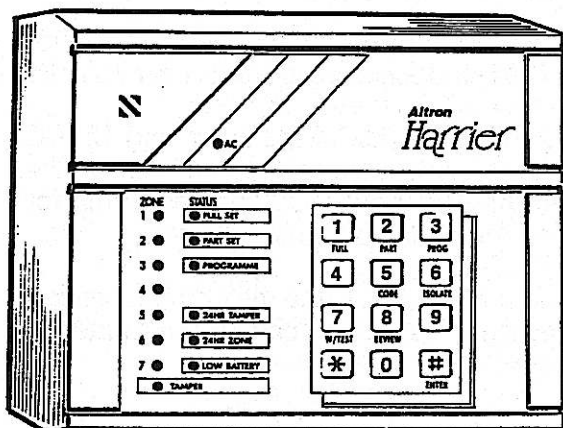
When the AC57 is used whilst programming or operating the HARRIER all codes should be briskly entered. A correct code sequence is acknowledged by two short beeps following the entry of the fourth digit and an incorrect sequence is indicated by a series of 8 error beeps. If indication of an error continues, 3-4 seconds should elapse before further data is attempted to be entered.

The AC57 has the availability of 6 different keypad codes, the Engineer and 5 Operator (including a Manager) codes.

With the use of the Engineer code access to all modes of operation is gained.

Using Operator 1 (Manager) code, access is gained to the User Programming Mode and SET/PART SET modes.

Operators 2, 3, 4, & 5 can SET and PART SET the system only.



AC57 Remote Keypad

3.1 Inputs

The 7 zones may be programmed individually to enable attributes to be applied to desired zones. These include:

- 24 hour
- Sentinel function
- Priority function
- Part Set function
- Retriggerable operation
- Entry zone
- Entry timed

Zones — Each of the 7 zones is supervised by a 10K end of line resistor. Opening or shorting an end of line resistor will initiate an alarm condition on that zone.

Tamper — The Tamper input is a normally closed input and opening this will initiate an alarm condition.

FS C PS — These inputs are used for control of the HARRIER using a 3 position key switch which must be mounted on the case utilising the knockout located in the middle of each side of the box. Remote positioning of the keyswitch is not recommended unless interfacing relays, located in the cabinet, are used.

To set the system, momentarily close C - FS (Full set) OR C - PS (Part set). Momentarily close again to unset the control.

3.2 Outputs

In addition to the 4 individually fused 12VDC outputs (in accordance with N.Z. Wiring Regulations 1991) the following outputs are available.

All the following outputs, with the exception of the alarm and 12VDC outputs are sink outputs i.e. go to 12v-ve when they are active. The maximum current available on the AL output is 300ma and 30ma for others. The maximum total load for all sink outputs is 360ma.

N.B. Wiring the PS output is important as it is the means of indicating the HARRIER is SET/PART SET when it is set by a pendant transmitter.

Alarm — This is a relay output and has changeover contacts. It will activate when the controller has been Set or Part Set and a zone or the tamper input is active.
In the event of all power being removed from the controller this output will be active.

AL — This is an additional alarm output and is active when the alarm relay has been activated. It is regulated in the time it is active by the alarm time that is programmed in Option 9 of the Engineer functions.

In the event of pressing the SET or PART SET button on a pendant when the HARRIER is in "LOW BATTERY" state the output will give a series of 8 pulses and will not set. (see Low Battery Override, page 12)

T — 24 HOUR TAMPER - This output is initiated by the Tamper input. The buzzers in the remote key pads will sound also.

Z — 24 HOUR ZONE - This output is initiated by any zone selected for 24 hour operation and will be activated by a duress code on a keypad or pendant. (see User functions.)

A.X. — This output is latched on when the AUXILIARY button on a pendant is pushed and reverts when again pushed - HARRIER IV only.

D.R. — This output is momentarily on when the DOOR button on a pendant is operated - HARRIER IV only.

F.S. — FULL SET - This output is active when the controller is placed in the SET mode, after the exit delay has finished.

P.S. — This output is active when the pendant transmitter sets or unsets the control. It will activate twice when the Harrier is set, full or part, and once when turned off.

F.C. — The FAIL TO COMMUNICATE output is active when the communicator fails to communicate with the Receiving Station. (see Fail to Communicate Option 4 under Communications, page 12).

12VDC — 4 outputs are provided for auxiliary equipment and are fused at 200ma ex factory. The size of the fuse must be selected for the size of the cable connected to these outputs. (see the electrical wiring regulations.)

NOTE: The maximum current available for all auxiliary equipment, including the equipment connected to sink outputs, is 1 ampere.

4.1 Wiring the HARRIER

When using keypads the maximum number that may be connected to the HARRIER is 4, preferably wired in a STAR format i.e. each key pad connected directly back to the control.

The specified maximum length of cable run, for each key pad, using .2mm cable is 150 metres.

4.2 Initialising

There are 2 methods of initialising the HARRIER.

Method A is used when pendants only are used to SET/PART SET the system and delay times and zone attributes have been preprogrammed prior to the HARRIER being installed, ie. method B has been undertaken previously.

A

1. Apply 230VAC and reset the microprocessor by shorting the reset pins.
2. Activate the HARRIER by pulsing the SET or PART SET button on a pendant.
3. The HARRIER now enters the UNSET mode and is ready to use.

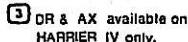
B

1. Connect remote keypad(s) as indicated in the Wiring Diagram.
2. Apply 230VAC. Reset the microprocessor by shorting the Reset pins together if necessary.
3. Enter the Access code "8 6 4 2".
4. Enter the Engineer code "----".
5. HARRIER now enters the UNSET mode and may be programmed for zone attributes, codes, delay times etc.

HARRIER WIRING DIAGRAM



ALTRON-TELECOM INTERFACE



HARRIER OUTPUT FEATURES

5.1 General

Two programming modes are available

Engineering functions.

User functions.

To access the Engineer programming mode:

Enter the Engineer code [----]

Enter [3]

The Part Set and Set indicators will illuminate indicating the HARRIER is in the ENGINEER mode.

The number for the function required is selected.

(See below for the summary of functions).

The amber indicator illuminates.

When a programming function is selected, as an example [1] for Priority Zones, the HARRIER's powerful memory is accessed and zones already programmed to have the Priority attribute are displayed by the appropriate zone indicator illuminating.

Any additions are made by entering the number of the zone.

An attribute is removed from a zone by the zone number being entered again.

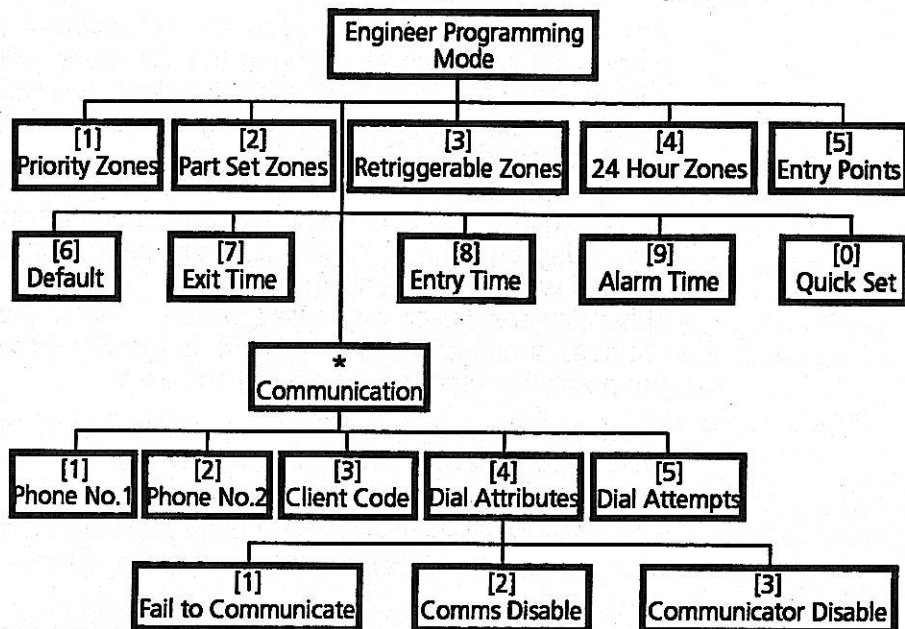
When programming of zones has been completed the [ENTER] key is pressed.

Other attributes required to be programmed can be programmed immediately after pushing [ENTER], by entering the number corresponding to the required function (see below).

When programming of all attributes has been completed, to exit from the Programme Mode, the [ENTER] key is again pushed.

Any zone may have any or all of the attributes as shown 1-5 and 8 below in the Engineer functions and 9 in the User functions.

ENGINEER PROGRAMMING (Engineer Code Only)



5.2 ENGINEERING FUNCTIONS

[1] Priority Zones

Selected zones, if activated at the time of setting the HARRIER, prevent the system from setting and initiate a buzzing routine until the HARRIER has been returned to the unset mode. This prevents automatic isolation of important zones.

[2] Part Set Zones

Selected zones, are automatically isolated when the HARRIER is put into the PART set mode.

[3] Retriggerable Zones

Selected zones are not isolated after an alarm condition. If a zone is programmed as retriggerable it is capable of initiating another alarm.

[4] 24 Hour Zones

Selected zones activate the 24 HOUR ZONE output only.

To reset this output enter the Engineer or User 1 code followed by the [Enter] key.

This action will clear an active Z or T output and disable these outputs until either

(i) A code is entered followed by the Enter key

(ii) The controller is placed in set mode.

[5] Entry Points

Any zone can be programmed as an entry point. An entry point zone activated during the Set mode will initiate the entry delay, selected in 8 below, and will allow the next two zones numerically higher in value also to delay triggering the alarm output.

For example if zone 4 = entry point, zones 5 and 6 become part of the entry route and can be entered in any order, eg. (4,5,6) or (4,6,5). Any other zones violated will trigger the alarm instantly.

This delay enables an authorised person to enter the premises and provided the HARRIER is UNSET within the prescribed time the system will not alarm.

Note: 1 If an entry point or entry delayed zone is selected for isolation before the system is set, the entry path takes into account that the zone is isolated.

2 In the case of an isolated entry point zone the next numerically higher zone becomes the effective entry zone.

3 Zones become isolated after they have been triggered and so can modify the entry path as 1 above.

[6] Default

This function will set up the HARRIER again as it came from the factory.

Following execution of this function, the HARRIER reverts to the initial power up state. The initialising sequence must be followed from here . . .

(See Initialising The Harrier).

Default Values:	FUNCTION	ZONE No's/TIME
	Sentinel	
	Priority	
	Part Set	4,5,6 isolated
	Retriggerable	
	24 hr. Tamper	8
	24 hr. Zone	7
	Entry Points	1
	Exit Time	60 seconds
	Entry Time	60 seconds
	Alarm Time	5 minutes
	Quick Set	disabled
	Telephone Number 1	

Telephone Number 2	
Client Code	
Fail to Communicate	disabled
Comms. access	enabled
Communicator	enabled
Dial attempts	4

[7] Exit Time

This delay enables the orderly exit from the secured area by invoking a delay before the system is finally set, following either the SET or PART SET command.

The delay commences immediately the SET or PART SET mode is entered and an audible beep sounds during the delay. Any zone that is violated at the completion of the exit delay will be automatically isolated.

Following the exit delay the HARRIER is in the SET or PART SET mode and the FS output will go active.

Exit times are calculated in 12 second intervals. Select [1] for 12 seconds, [5] for 60 seconds. The maximum is 96 seconds.

[8] Entry Time

See Entry Points 5 above.

Zones selected for entry delay, which delays the activation of an alarm condition, will not trigger the alarm outputs for the period of the entry delay, allowing time for the HARRIER to be UNSET.

An audible beep at the remote keypads accompanies the delay.

Zones not selected for entry delay (see ENTRY POINTS above) cause the alarm outputs to be triggered immediately.

Entry times are calculated in 12 second intervals. Select [1] for 12 seconds, [5] for 60 seconds. The maximum entry time is 96 seconds.

[9] Alarm Time

This function determines the period the AL output is active, thereby turning an internal siren, or other device initiated by it, off after the prescribed period. Alarm times are calculated in 1 minute intervals. Select [1] for 1 minute, [5] for 5 minutes. The maximum period is 8 minutes.

Select [9] for continuous AL output. When the continuous siren output is selected every alternate indicator illuminates.

Select [0] Toggle the alarm relay between timed or continuous operation. The programmed status is displayed by the zone leds as follows.

Continuous — Zone Leds Off — Time Led On.
Timed — Zone Leds On — Time Led Off.

[0] Quick Set

The Quick Set function enables the SET and PART SET modes to be entered using two keystrokes instead of five when a keypad is used.

To Quick Set into the SET mode push [1] then [Enter].

To Quick Set PART SET push [2] then [Enter].

To programme select [1] to enable or [0] to disable the function.

[*]

This option undertakes programming of the communicator.

Communications

Select: 1 = Telephone No.1
2 = Telephone No.2
3 = Client Code
4 = Dialling Attributes
5 = Dialling Attempts

Note – Telephone numbers – 15 digits maximum
Client Code – 4 digits and all must be entered

Telephone No's [1] & [2] These digits select the option for entering the phone numbers that the communicator is to dial.

To programme Telephone No.1 –
enter [1]

[*]
phone number – 15 digits max.
[ENTER] to save.

To programme Telephone No.2 –
enter [2]

[*]
phone number – 15 digits max.
[ENTER] to save.

Client Code [3] This selects the option for entering the numbers allocated as client identification at the Monitoring Station.

To programme the Client Code –
enter [3]

[*]
client code – must be 4 digits
[ENTER] to save.

Dial Attributes [4] This selects the option for enabling/disabling the Fail to Communicate output, preventing access to the Harrier by equipment connected to the phone network, enabling/disabling the communication function and selects reporting of alarm conditions only (no sets or unsets).

To programme the Communication Attributes –

enter [4]

* [1], [2], [3] or [4]

[ENTER] to save.

* where [1] toggles on and off the Fail to Communicate output.

[2] toggles the Disable Access to the Harrier on and off.

[3] toggles the communicator on and off.

[4] Toggles alarm reports only On & off.

Note: This option when selected will change the 24hr test report to a 7 day test report and reports alarm activations and restorals only.

Dialler Attempts [5]

This function selects the number of times the communicator will attempt to communicate with the Monitoring Station before the Fail to Communicate output is set.

Although a "Dial Attempts" number is set this does not limit the number of times, the communicator attempts to send data. Following the number set, the communicator will repeat the above, following a 10 minute rest period. (see also Fail to Communicate in Dial Attributes 4 above).

To programme the number of attempts –

enter [5]

* [X]

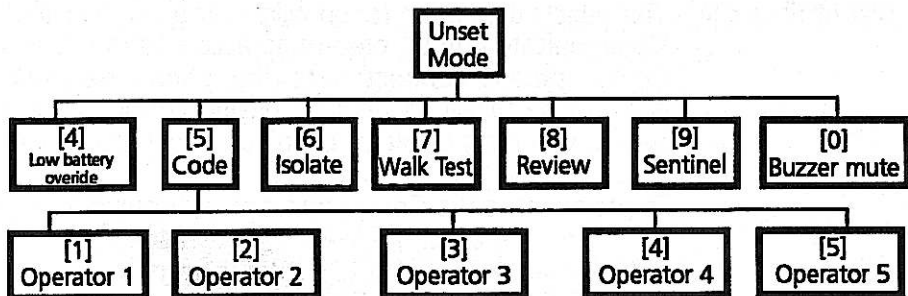
[ENTER] to save.

* Where X represents the number of attempts (minimum 2 and maximum 8).

Note – The Harrier Communicator automatically transmits a 24 hour test report. The first 24 hour test report is initiated 12 hours after a reset of the processor.

5.3 User Functions

User Functions are Utilised when there are remote keypads connected to the system and are accessed following the entry of the Engineer



code or Operator 1 (Manager) code followed by the number corresponding to the required function (see below).

To enter the User Programming mode —

enter the Engineer or Operator 1 code[_ _ _ _]

Enter a number as shown below for the required function.

The SET, PART SET, and amber indicators will illuminate.

[4] Low Battery Override When the HARRIER is in the UNSET mode and the battery voltage drops to 12.2 volts, the low battery indicator will illuminate and the buzzer will sound at the remote key pads if they are connected to the system. Whilst this state exists the HARRIER cannot be set and only this option can be accessed. Selecting this option will turn the buzzer off and allow the HARRIER to be placed in either the SET or PART SET mode.

[5] Code Change There are 5 Operator codes.

To programme or change an Operator code:

enter any number between 1 and 5 corresponding to the Operator code to be programmed.

The appropriate zone indicator will illuminate.

Enter the NEW code.

If further codes are required to be programmed, select another number corresponding to the operator to be changed.

To re-enter the UNSET mode press [ENTER].

NOTE: An Operator code cannot be the same as the Engineer code. If so the Engineer functions cannot be accessed.

[6] Isolate

This function is used to temporarily isolate any zone

from being operational during the period the HARRIER is next SET or PART SET.

The TAMPER circuit is isolated by treating it as if it was ZONE 8.

Zones so selected will revert to their normal condition when the system is next unset.

[7] Walk Test

This function is selected to allow inspection of detection devices whilst the HARRIER is in the UNSET mode. After entry to this function if a zone is activated its associated indicator is latched enabling indication of detectors correctly tested. The HARRIER reverts to the UNSET mode when the [ENTER] key is pressed.

[8] Review

Zones that have alarmed during a FULL SET or PART SET mode may be displayed upon request.

8 levels of review are available corresponding to the last 8 SET and PART SET operations.

Upon entry to this function the required level is selected. [1] is selected to view the last setting, [2] to view the 2nd to last setting etc.

When a SET or PART SET mode is reviewed the indicator, associated with a zone that has alarmed during that operation, will illuminate. The first zone to go into alarm will illuminate before the others.

[9] Sentinel Zones

Selected zones, when activated in the UNSET mode, initiate a short audible buzzing routine at the key pads. A 30 second clear period is required before any zone can reinitiate the buzzer.

[0] Buzzer Mute

With the use of this option the key pad buzzer may be muted during the exit and entry delay periods in the part set mode. Re-entering 0 enables the buzzer again.

DURESS

The operation of any 2 buttons simultaneously on a pendant transmitter or any correct code entered on a remote keypad with the last digit replaced by a [9] will cause the 24 Hour Zone output to be activated.

NOTE: This activation will not be displayed on any of the remote key pads.

To clear a DURESS condition turn the HARRIER ON and OFF using a pendant, or, enter any code plus [ENTER] at a remote keypad.

PANIC

The operation of the [*] and [#] simultaneously will cause the 24 hour zone output, Z, to activate and the Communicator will transmit a duress message.

6

SPECIFICATION

Control Unit

- 7 input zones supervised by 10K end of line resistor.
- 1 Tamper input – normally closed.
- Low battery detection – threshold 11.7 volts.
- Alarm relay form "C", SPDT, 1 amp DC
- Operating temperature 0 to 50 degrees Celsius.
- Current draw 120 ma.
- Size 285 x 260 x 75 mm.
- Weight 3.5 Kgm.

Power Supply

- 230 VAC.
- 17.5 VAC to control board.
- Battery charging voltage 13.8 V.
- Battery output 3 amp fused.
- Auxiliary outputs 200 ma. fused ex factory.

Pendant Transmitter

- Nominal 20 metre range.
- Size 70 x 35 x 12 mm.
- Battery 1 x alkaline 12v V23A.
- 2 or 4 button operation.
- 6561 address codes.

AC57 Key Pads

- 12 button backlit with audible and tactile feedback.
- 15 system and function indicators.
- Audible indication of system status.
- Current draw 46 ma.

WARRANTY

Altron Industries Limited warrants that for a period of three years from the date of purchase of our control panels, the product shall be free of defect in materials and workmanship under normal use and that in fulfillment of any breach of such warranty Altron Industries Limited shall at it's option, repair or replace the defective equipment upon return of the equipment to it's repair depot. This warranty applies only to defects in parts and workmanship and not to damage incurred in shipping or handling, or damage due to causes beyond the control of Altron Industries Limited, such as lightning strike, excessive voltage, mechanical shock, water damage or damage arising out of abuse. Alteration or improper application of the equipment Altron Industries Limited neither assumes, nor authorises any other person purporting to act on it's behalf to modify or to change this warranty. Nor to assume for it any other warranty or liability concerning this product.

In no event shall Altron Industries Limited be liable for any direct/indirect or consequential damages, loss of anticipated profits, loss of time or any other losses incurred by the buyer in connection with the purchase installation or operation or failure of this product.

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