Disabled Persons Toilet Alarm Kit

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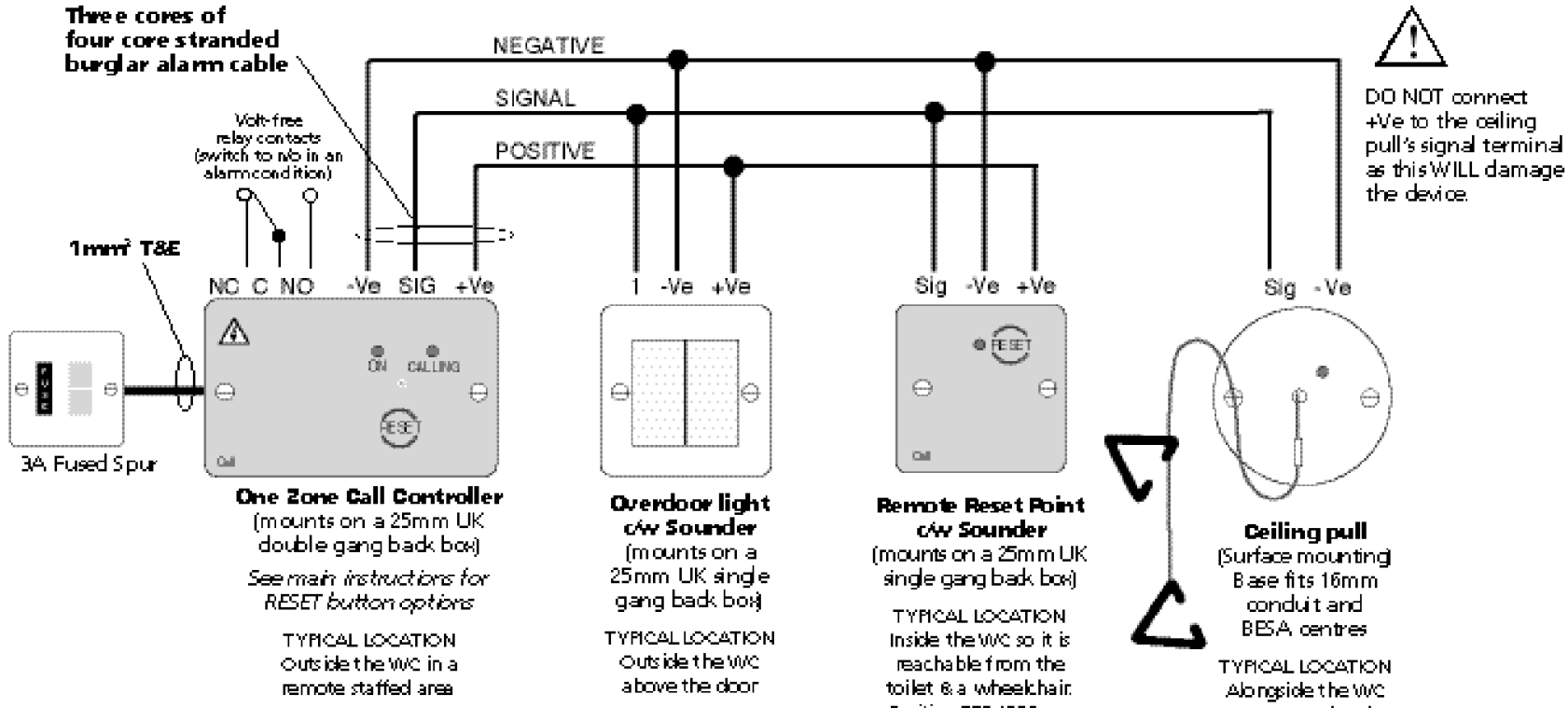
Single Zone Emergency Assistance Alarm

800 SERIES

CE

QUICK START INSTALLATION GUIDE

The diagram below summarises key information provided in the rest of this document. For experienced installers, this should be all you need to get started. **If in doubt - or if using this equipment for the first time - read the full instructions.** All wiring should be provided in accordance with the current edition of the IEE Wiring Regs (BS 7671) and/or other national wiring rules as applicable.



The One Zone Call Controller included in this kit is a piece of Class 2 equipment. However, any metal parts used during installation (i.e. metal back box) MUST be earthed. The earth termination point on the One Zone Call Controller is provided for installer convenience only and, as such, should only be used if an earth connection is not required elsewhere.

ABOUT THIS DOCUMENT

This document provides a brief overview of disabled persons toilet alarm system design and installation, based on the recommendations of BS8300 (the code of practice for the design of buildings and their approaches to meet the needs of disabled people).

For further information, please refer to the full version of BS8300, copies of which are available at your local reference library or can be purchased from the BSI (British Standards Institute; Tel. +44 (0)20 8996 9000; Web: www.bsi-global.com). Other National standards of design and installation should be referenced and adhered to where applicable.

This document must not be left accessible to the user. A separate user guide (document no. DNU9510000) is available for this purpose.

No responsibility can be accepted by the manufacturer or distributors of this equipment for any misinterpretation of an instruction or guidance note or for the compliance of the system as a whole.

IMPORTANT NOTES

This equipment must be installed and maintained by a suitably skilled and technically competent person.

The One Zone Call Controller included in this kit is a piece of Class 2 equipment. However, any metal parts used during installation (i.e. metal back box) MUST be earthed. The earth termination point on the One Zone Call Controller is provided for installer convenience only and, as such, should only be used if an earth connection is not required elsewhere.

CE This product has been manufactured in conformance with the requirements of all applicable EU Council Directives.

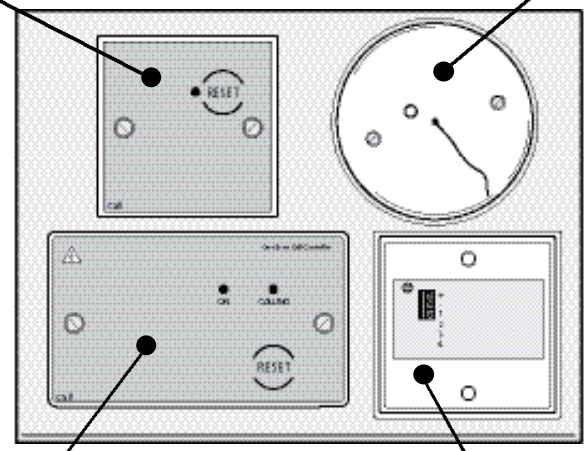
NC951 KIT CONTENTS

This kit includes everything you need to create a high quality BS8300 clause compliant emergency assistance alarm, except cables and fixings. The following items are included in the kit box:-

NC809DBB Remote Reset Point c/w Sounder
Includes a Braille label, reset button, red reassurance LED and on-board sounder.

NC807C Ceiling Pull
Includes a red reassurance LED, three metres of red pull cord and two triangular pull bangles.

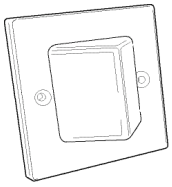
Accessory pack
Containing six device mounting screws and two shorting links.



NC949 Disabled WC Sticker
A gloss finished, permanent vinyl sticker featuring the universally recognisable Disabled WC symbol.

NC942B One Zone Call Controller
Includes an on-board 12V 140mA PSU, a 500mA rechargeable backup battery, Braille label, alarm LED, power on LED, volume adjustable sounder, volt-free relay output and a link selectable reset/mute button.

NC806CS Overdoor Light c/w Sounder
Now supplied as a single gang moulded unit (pictured right) offering improved visibility, reduced installation times and less likelihood of vandalism



Documentation
Including a Design and Installation Guide (this document) and a User Guide.

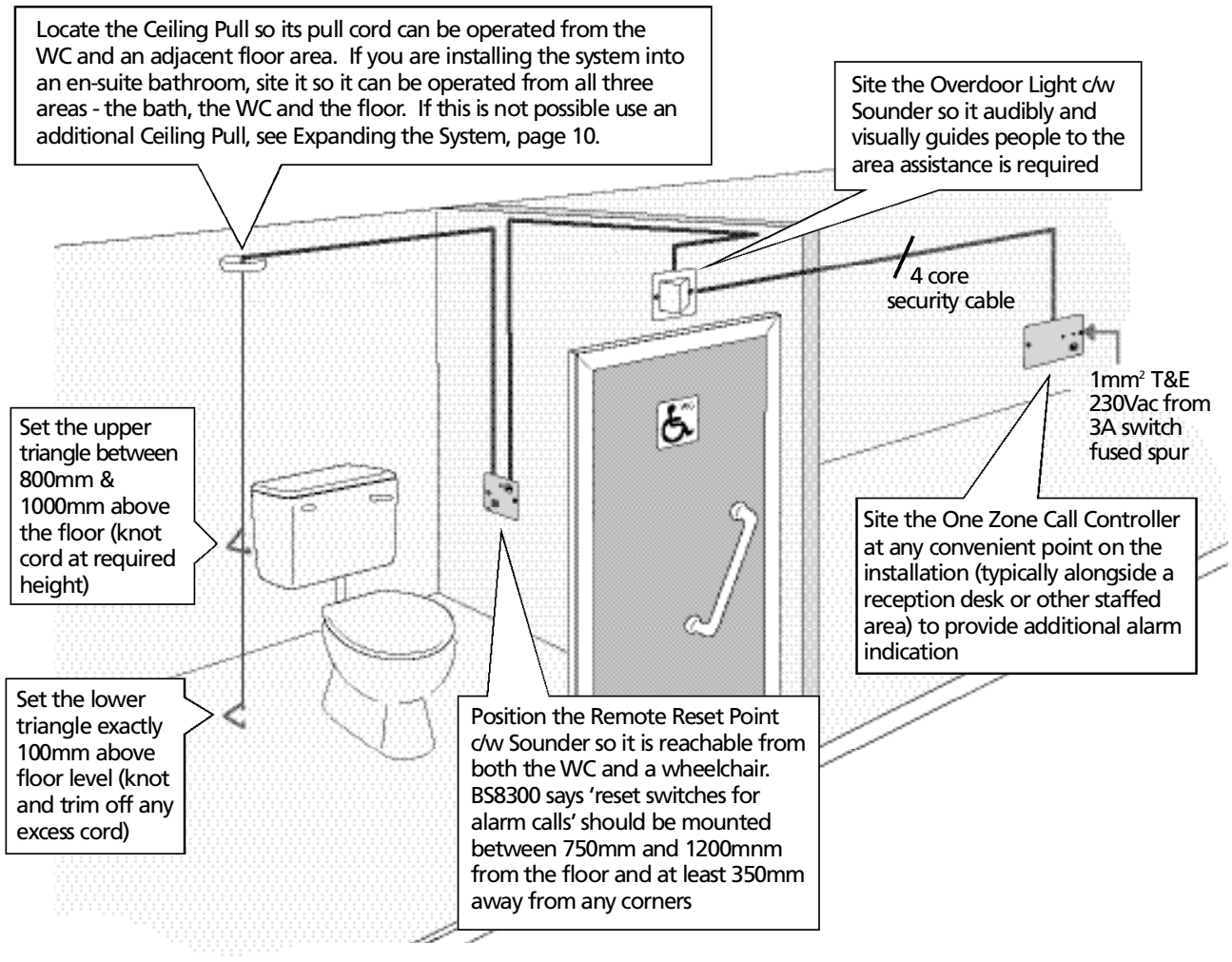
If installing our **NC951STRIP** kit, in addition to the above items, a 1.5m length of strip-switch and an NC889 call latch module are also included. Note that specific instructions on how to connect these two additional items to the system can be found on page 10 (Expanding the system).

DESIGNING A SYSTEM

The diagram below shows a typical layout for a good practice disabled persons toilet alarm system based on the recommendations of BS8300. It should be noted that the exact position of the devices shown can be varied to suit a particular application provided that the recommendations described are met.

Other/alternative standards of design and installation should be adhered to where pertinent.

Figure 2 : A Typical BS8300 Clause Compliant Emergency Assistance Alarm



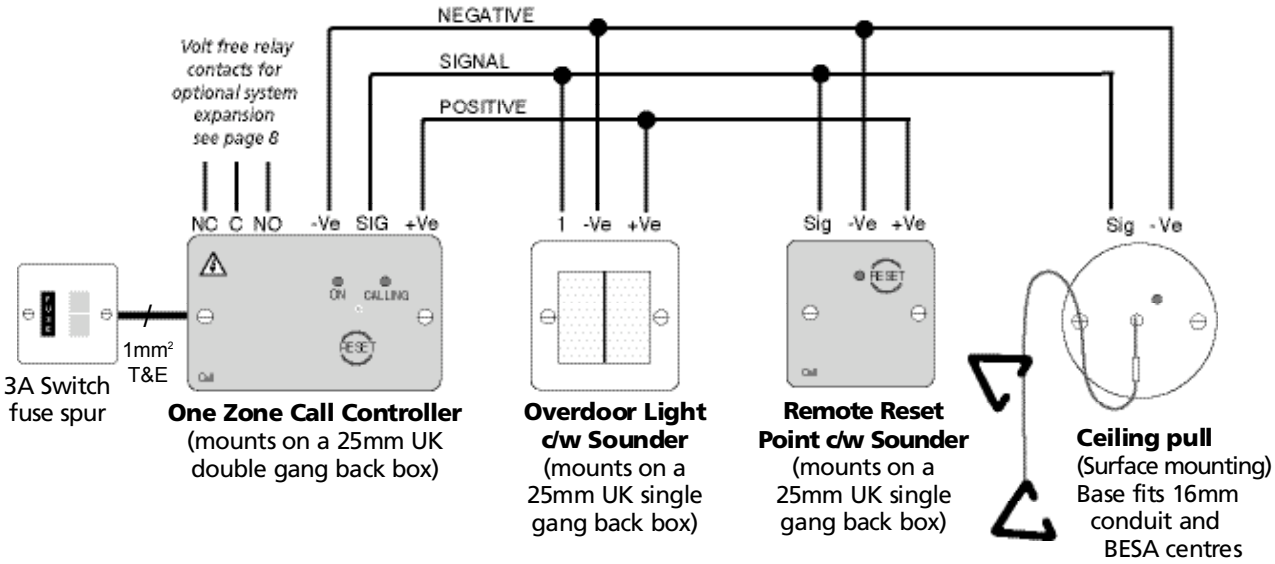
Up to three additional 800 Series devices (ceiling pulls, overdoor lights, reset points, etc., can be connected to the system if required - see pages 10 & 11 for details). Note that the call controller also features an onboard volt-free relay which can be optionally interfaced to externally powered beacons, strobes or other ancillary devices (again, see page 10 for details).

All system components should be sited internally in areas where they are readily accessible by the person(s) designated to use them. Areas should be clean and dry and the ambient light and sound levels should allow the status of all device indicators and sounders to be seen and heard. Any likelihood of tampering or vandalism should also be taken into account.

INSTALLING THE SYSTEM

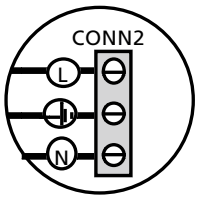
ALWAYS ENSURE THE MAINS SUPPLY IS ISOLATED BEFORE MAKING ANY CONNECTIONS.

Figure 3 : Typical NC951 Disabled Persons Toilet Alarm Kit Wiring



Mains wiring

The general requirement for the mains supply to the call controller is fixed wiring, using three core cable of not less than 1mm². This should be fed from an isolating switched fused spur, fused at 3A, which is marked appropriately and securefrom unauthorised operation.



Live and neutral should be connected to the controller's L and N terminals respectively. If a plastic back box is used, make the earth connection to the terminal marked ⊣⊢ at connector block CONN2. If a metal back box is used, the earth connection must be made to the earth bonding point on the back box.

All external wiring brought into the unit must be adequately insulated with PVC or Neoprene.

All mains wiring should be provided in accordance with the current edition of the IEE Wiring Regs (BS 7671) or in accordance with the relevant national wiring rules.

Extra low voltage (ELV) wiring

All low voltage wiring must be carefully planned before starting the job. Always segregate low voltage wiring from the mains wiring.

Three cores of four core stranded burglar alarm cable is ideal for most installations with all components requiring a positive, negative and signal connection (except the ceiling pull which DOES NOT require a positive connection).

IMPORTANT: Connecting positive to the ceiling pull's signal (Sig) terminal WILL permanently damage the device.

Note that the running order of the overdoor light, ceiling pull and reset point can be changed to suit a specific application and/or to reduce wiring runs.

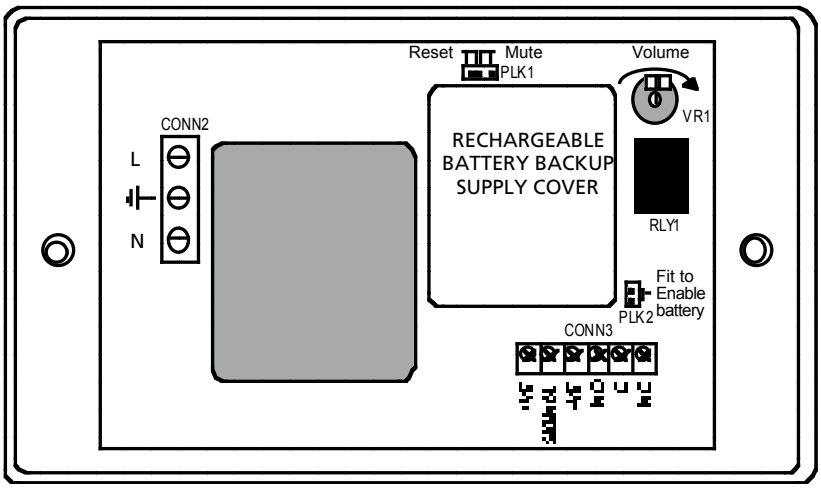
All wall-mounting devices should be mounted onto a back box of the required depth. Assess the condition and construction of all mounting surfaces prior to installation and use a suitable screw fixing arrangement. Note that the ceiling pull is surface mountable.

Important: In the event of a short circuit on the low voltage wiring, an internal self-resetting fuse will temporarily isolate the system until the fault is cleared. The Call Controller is also protected by a non-serviceable thermal fuse in its transformer winding which will blow if there is a serious malfunction. If this happens, return the controller for repair.

ENGINEER SELECTABLE FUNCTIONS

The NC942B One Zone Call Controller has a number of engineer selectable functions. This section of the manual explains how these functions work and how to implement them.

Figure 4 : Rear view of the NC942B One Zone Call Controller



Reset button operation (Link PLK1)

Link PLK1 allows the call controller's on-board RESET button to be set up to:-

(a) Reset the system

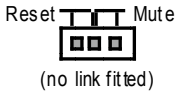
In this position, pressing the controller's RESET button when an alarm signal is active will return the entire system to its normal state.

(b) Mute the system

In this position, pressing the controller's RESET button when an alarm signal is active will mute the controller's on-board sounder. All other sounders and reassurance LEDs will remain active until the Remote Reset Point's RESET button is pressed inside the WC.

(c) Have no effect

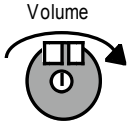
In this position (no link fitted), pressing the controller's RESET button when an alarm signal is active will have no effect.



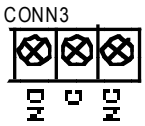
WARNING: Many authorities insist that the reset function of a call system be carried out at 'point of source' (i.e. in the room in which the call was made) to ensure that the person who raised the alarm is visited. Therefore, unless there is a definite requirement to the contrary, we recommended you choose option (c) above. If in doubt, speak to the building manager for advice. Note that the default setting for Link PLK1 is link not fitted/no effect and that the shorting link is provided in the kit's accessory pack.

Volume control (Potentiometer VR1)

Potentiometer VR1 can be used to adjust the level of the call controller's on-board sounder. The default setting for the volume control is its mid-setting. Turning the control clockwise with a terminal screwdriver will increase the volume, turning it anti-clockwise will decrease it. The actual level required will normally depend upon the ambient noise levels within the building and personal preference.



On-board volt-free relay operation (RLY1)

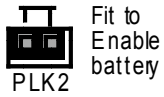


The call controller includes an on-board volt-free relay with normally open (NO), normally closed (NC) and common (C) contacts. The relay contacts are rated at 30Vd.c. @ 1A and can be used to switch optional externally powered devices such as sounders, strobes or the extra low voltage coils of mains con-t rolling relays.

When no calls are on the system, the normally closed contact is made. When an alarm signal is present, the relay switches and the normally open contact is made. Muting the system will have no effect on the relay's operation.

See EXPANDING THE SYSTEM, page 9, for typical wiring schematics.

Battery backup enable/disable (Link PLK2)



Link PLK2 enables or disables the call controller's 500mAHr rechargeable battery backup facility. When enabled (link PLK2 fitted), the NC942B's onboard battery backup supply will continue to power the system for approximately 24 hours (standby) plus 15 minutes (alarm running time) in the event of a mains failure. This will be indicated by the controller's 'ON' LED flashing green approximately once per second.

Should the mains supply remain disconnected for a prolonged period of time, the battery backup facility will automatically shutdown to prevent the batteries from deep discharge.

Note that the default setting for Link PLK2 is link not fitted/battery disabled. This is to conserve battery life and ensure the safety of the controller during storage/transit. Note that the shorting link required to enable the facility is provided in the kit's accessory pack.

Optional emergency/distress call level (Extra equipment required)

If required, the call controller can be used to generate an additional, more urgent level of call using separately available components from our 800 Series Call System range. Compatible devices include the NC804DE emergency call point and the NC802DEWM water resistant alert point (see pages 9 & 10 for details). These devices are typically used to allow the person attending to the call to request additional assistance should the person who raised the alarm be in distress.

When an emergency/distress call is triggered, an active or muted standard alarm call will be overridden. The controller's 'CALLING' LED will flash red and its on-board sounder (and relay) will pulse intermittently. The overdoor light c/w sounder outside the WC will also pulse to indicate that more urgent assistance is required.

Up to three additional calling devices can be connected to an NC942B call controller. Should you wish to connect more, consider using an NC941 call controller which is specifically designed for powering larger single zone call systems. Information on how to connect additional devices to the system can be found on page 9.

Sounder and LED test facility

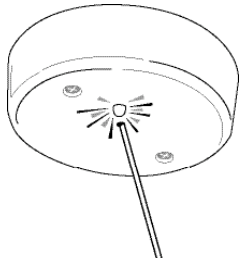
Pressing the controller's RESET button when link PLK1 is fitted in the Reset (a) position will cause all of the system's sounders and LEDs (apart from the ceiling pull's LED) to activate. When the button is released, the LEDs and sounders will switch off. The same test can be carried out by pressing the Remote Reset Point's RESET button.

BASIC OPERATION

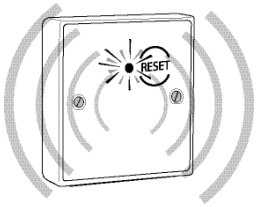
Once the system has been installed, check that it works correctly with reference to the diagrams below.

Raising an alarm

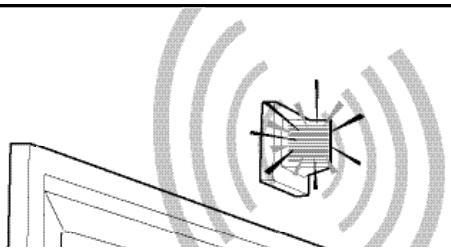
The distressed person raises an alarm by pulling the cord of the ceiling pull unit



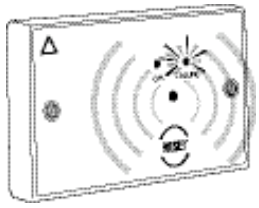
The ceiling pull's red reassurance LED illuminates to reassure the user that an alarm has been made



Additional feedback that an alarm has been raised is provided inside the WC via the Remote Reset Point's sounder and reassurance LED



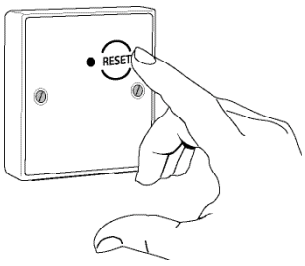
Outside the WC, the overdoor light c/w sounder activates to visually and audibly guide people to the area where assistance is required



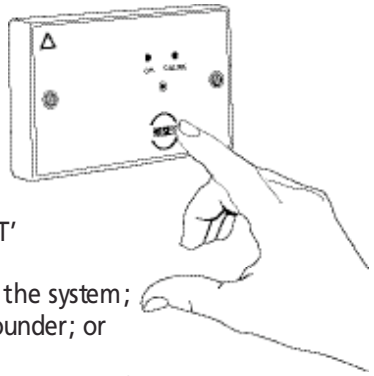
The one zone call controller's 'CALLING' LED illuminates and its sounder activates to let staff know that someone is in need of assistance

Note that the call controller's onboard relay will also activate when an alarm call is made and any external equipment connected to the controller's relay contacts will operate as configured.

Resetting the system



Alarm calls can be cancelled from inside the WC at any time by pressing the Remote Reset Point's 'RESET' button



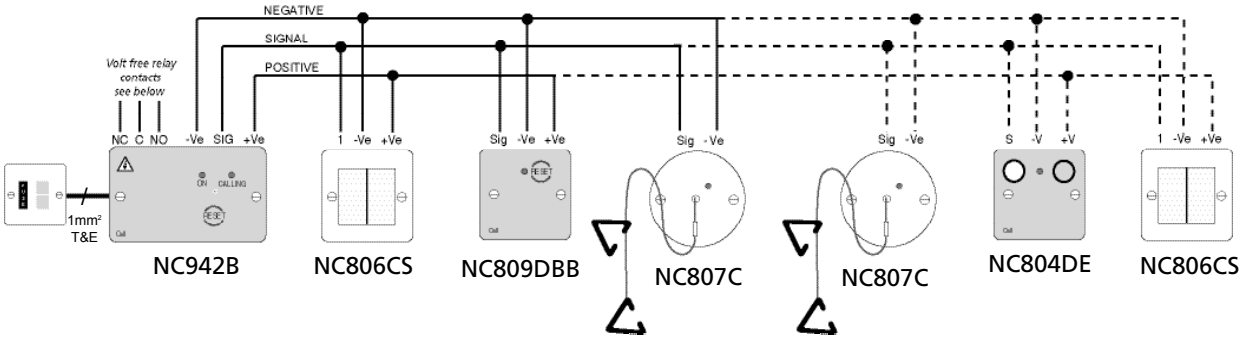
Depending on how the Call Controller is configured (see page 6), pressing its 'RESET' button will **:-**
(a) cancel the alarm and reset the system;
(b) mute the call controller's sounder; or
(c) have no effect.
Please read the warning notice on page 6 for important advice on how this function should be set-up.

EXPANDING THE SYSTEM

The diagrams below show how the system can be optionally expanded to suit a particular application.

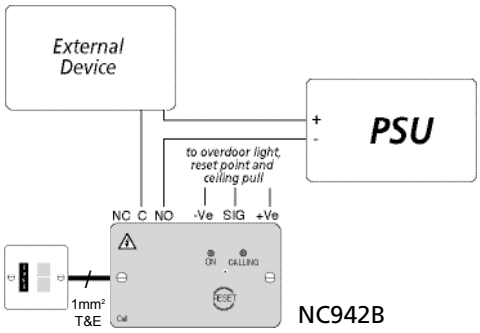
Connecting additional 800 Series devices to the system

Up to three additional 800 Series devices (any mix) can be connected to the system as shown below. Should you wish to connect more than three devices, consider using an NC941 call controller which is specifically designed for use on more heavily populated single zone systems. Devices can be wired to the call controller in any order to suit the application.



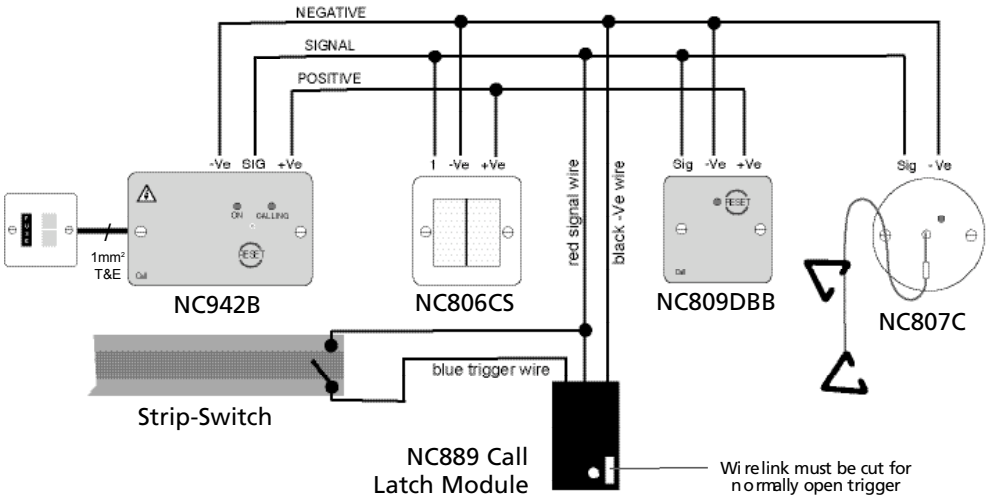
Connecting a non-800 Series device to the system via the controller's relay output

The call controller's volt-free relay contacts are rated at 30Vd.c. @ 1A and can be used to switch optional externally powered devices such as sounders, strobes or the extra low voltage coils of mains controlling relays. A typical wiring schematic appears right. When an alarm signal is present, the relay switches from normally closed to normally open.



Connecting a length of BF358 strip-switch to the system

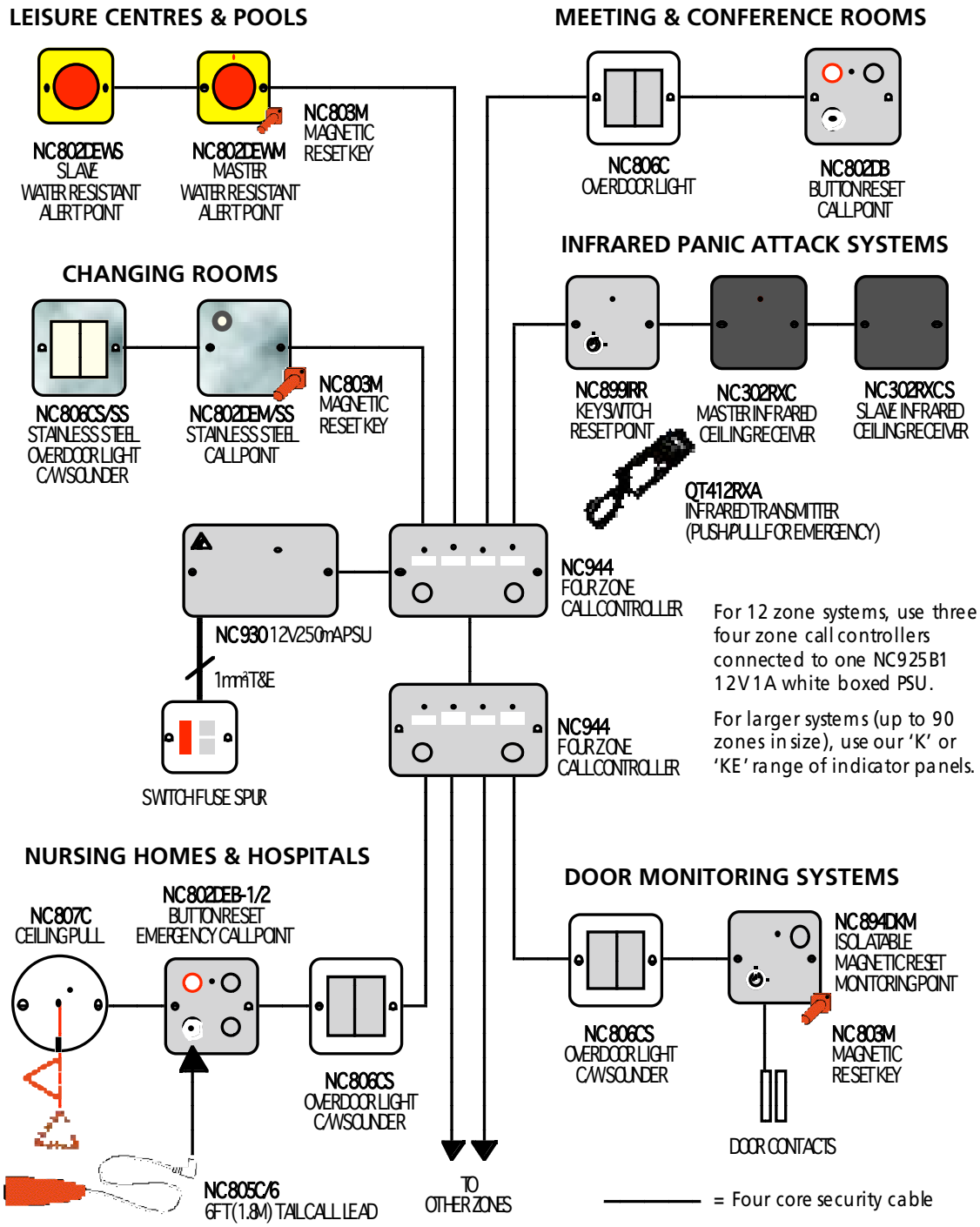
The diagram below shows how to interface a length of strip-switch to the system using an NC889 call latch module. (Our new NC951STRIP kit includes a 1.5m length of strip-switch and a call latch module - note that longer lengths of strip-switch and corner pieces can be purchased from your distributor).



Refer to the instructions supplied with the strip-switch for mounting details.

OTHER 800 SERIES APPLICATIONS

800 Series Call Systems can be used for literally hundreds of applications ranging from simple one zone installations in disabled persons toilets to multi-zone systems in nursing homes, hotels, shops, council offices and GP surgeries. In addition to the items included in this kit, a wide range of additional components are available including multi-zone indicator panels, wall-mounting call points (in plastic and stainless steel), water resistant alert points, infrared ceiling receivers, monitoring points and remote sounders. The diagram below shows a small selection of the devices available - please contact your distributor for further details.



TECHNICAL SPECIFICATIONS

NC942B One Zone Call Controller with battery backup facility

Mains supply:	Voltage: 230V a.c.; Max current: 23mA; Frequency: 50Hz.
Output:	Voltage: 12V d.c.; Current: 140mA; Volt-free relay contacts (NO/C/NC).
Indicators:	Red alarm present LED; Green supply present LED (flashes green when battery back up is active in the event of mains failure).
Controls:	'RESET' Button (link selectable for reset, mute or no function).
IP Rating:	IP41 when correctly installed.
Dimensions:	147 x 87 x 39mm (WxHxD). Mounts on 25mm UK double gang back box.

NC807C Ceiling Pull

Input:	Voltage: 12V d.c.; Connections: Signal and -Ve.
Pull cord:	Generates an alarm call when activated.
Indicators:	Red reassurance LED active in alarm.
IP Rating:	IP41 when correctly installed.
Dimensions:	93mm diameter x 27mm deep. Surface mountable.

NC806CS Overdoor light c/w sounder

Input:	Voltage: 12V d.c.; Connections: Signal, -Ve and +Ve.
Indicators:	Dual ultra-bright red LEDs active in alarm.
Sounder:	Active in alarm.
IP Rating:	IP41 when correctly installed.
Dimensions:	87 x 87 x 68mm (WxHxD). Mounts on 25mm UK single gang back box.

NC809DBB Reset point c/w sounder

Input:	Voltage: 12V d.c.; Connections: Signal, -Ve and +Ve.
Indicators:	Red reassurance LED active in alarm.
Sounder:	Active in alarm.
IP Rating:	IP41 when correctly installed.
Dimensions:	87 x 87 x 24mm (WxHxD). Mounts on 25mm UK single gang back box.

800 SERIES

© Approved Document No: DNU0951001 Rev 2. We reserve the right to alter product specifications at our discretion and without prior notice. Errors and omissions excepted. This manual has been carefully checked prior to publication. However, no responsibility can be accepted by the manufacturer or distributors of this equipment for any misinterpretation of an instruction or guidance note or for the compliance of the system as a whole.

ADDENDUM TO NC951 INSTRUCTIONS

UPDATE TO BS8300

BS8300 (the code of practice for the design of buildings and their approaches to meet the needs of disabled people) has recently been updated and includes some new information regarding the design of emergency assistance alarms and the location of devices used in them.

Although the system design information included in our existing instructions is still fundamentally correct and applicable to many accessible toilet / emergency assistance alarm systems, your attention is drawn to the following with regard to the 2009 edition of BS8300:-

1. The recommended mounting height for reset buttons has changed. The standard now states they should be located with their bottom edge between 800mm and 1000mm above floor level.

2. The new 2009 standard includes a number of example accessible WC, 'changing place' and accessible bedroom layouts that show ceiling pulls and reset points located in a variety of positions dependent on the application and other sanitary items used (wash basins, baths, etc). We therefore recommend you refer to the text and diagrams in BS8300 (2009) before designing and/or installing the system.

Other/alternative standards of design and installation should always be adhered to where pertinent.

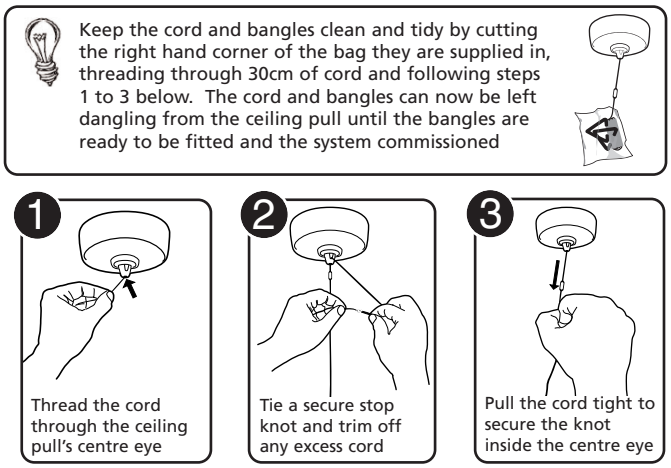
NEW-IMPROVED CEILING PULL UNIT

This kit now includes a new-improved ceiling pull unit with the following features:-

- Smaller, less obtrusive design
- Wider openings in the base for incoming cables
- Quicker installation - lid simply clicks into base and is secured in one twisting motion - no lid fixing screws required!
- Improved confidence light - central diffuser emits bright glow over a wider area, providing better contrast for the visually impaired
- Spare terminal (labelled +Ve but not electrically connected) for use as a wiring junction point if required
- Separate easy-to-fix pull cord - see cord installation hints and tips (right). Information on how to set the triangular bangles can be found inside the accessory pack. Wire the ceilng pull as detailed in the main instructions.

Our main instructions will be updated to include the information on this addendum in due course.

Approved document no. DNU8070022 Rev 2



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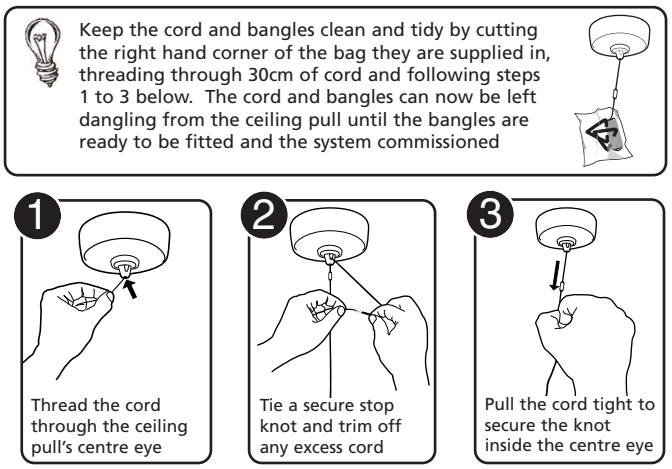
- Improved confidence light - central diffuser emits bright glow over a wider area, providing better contrast for the visually impaired
- Spare terminal (labelled +Ve but not electrically connected) for use as a wiring junction point if required
- Separate easy-to-fix pull cord - see cord installation hints and tips (right). Information on how to set the triangular bangles can be found inside the accessory pack. Wire the ceilng pull as detailed in the main instructions.

Our main instructions will be updated to include the information on this addendum in due course.

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