Quantec
controller

installation and programming manual

index

Summary of new functions and system enhancements

The latest Quantec Controller firmware revision 8A3 brings the following enhancements / programming functions to the Quantec system:-

Increased zone capacity

There are now 64 zones available for the setting up of addressable overdoor lights and sounders (the previous limit was 32), allowing more sophisticated "follow my leader" light scenarios to be implemented.

HTM2015 Mode facility

Quantec in its basic state meets and exceeds the requirements of virtually all agencies with regard to the operation of stand-alone call systems.

In the relatively specialist installation area of bedhead services for hospitals and certain other NHS premises, an increasing number of system specifications have started calling for compliance with HTM2015.

Issued by the UK's Department of Health, HTM (Health Technical Memorandum) 2015 gives comprehensive advice and guidance on the design, installation and operation of bedhead services, and in particular patient-to-nurse call systems.

When HTM2015 mode is selected via the controller's System Setup menu, the following changes occur to the way Quantec operates:-

1. Auto Night Mode is disabled.

2. Day/Night Mode cannot be entered using the Controller's front panel menus. Instead, you must use a single remote Day/Night Mode Switch (a QT611 multi-purpose programmable device configured as a Day/Night Mode Switch).

3. The controller's internal sounder is disabled for call type signalling.

It is important to note that selecting HTM2015 mode via the controller's System Setup menu will not in itself make Quantec HTM2015 compliant. HTM2015 is a comprehensive and far reaching three-part document and in order to comply, custom-made switch assemblies and special sounders capable of generating HTM2015 tones may be required. To help facilitate compliance, a range of unplated universal programmable devices are available that are designed to fit inside or alongside third-party switch assemblies, etc. A high-output addressable sounder complete with programmable HTM2015 tones is also available, part no. QT688/2. Please contact your distributor for further information. Copies of HTM2015 are available from The Stationery Office on Tel. 0207 873 0011.

Surveyor Mode facility

Quantec Surveyor (part no. QT707S) is a powerful new data management software package that helps healthcare managers and building owners take tighter control of their care facilities. In addition to displaying 'real-time' call, reset and room occupancy information, it allows detailed data analysis reports on criteria such as longest calls, most visited rooms, busiest shifts and average call response times to be sent direct to a PC's desktop. As such, Surveyor is an invaluable source of reference for evaluating staff performance, reviewing patient demands and determining optimum labour levels/shift patterns.

Surveyor mode, selectable via the Controller's System Setup menu, allows you to utilise Surveyor by automatically setting the Controller's datalogging parameters to "log every event". It also inhibits a printer fault message from occurring when the PC is switched off.

Radio receiver device type now available
(helps alleviate dual infrared and radio calls)

A new device type has been created for radio receivers with a firmware revision of 3A0 or above.

By assigning radio receivers with their own device type (previously they had to be assigned as call points) the system is able to better differentiate between infrared and radio calls. Now, if a call of the same type is received on an infrared receiver at the same time as a call from a radio receiver, the radio call is ignored and only the infrared call is presented to the system. This alleviates the old scenario where dual calls were received on the system from QT412 range transmitters.

If this functionality is not required, the radio receiver can be configured as a standard call point. See the latest version of our QT422RX radio receiver installation instructions for details.

Important notes & system wiring overview

Important notes

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

• This equipment is a piece of Class 1 equipment and MUST BE EARTHED

• 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.

• The manufacturer's policy is one of continuous improvement and we reserve the right to make changes to product specifications at our discretion and without prior notice. E&OE.

• When Quantec is powered up for the first time, the controller may need to reset its Configuration Data to default values. The message 'Fit NVM Link, or 'E' to Abort' will be displayed. When the NVM link is fitted the message 'INITIALISING DATA, PLEASE WAIT' will flash on the display. This procedure may take up to 1 minute and MUST be completed before Quantec will operate properly.

• The controller's power supply PCB features an Earth Fault LED. In normal operation this will be lit red. Please note this is not a fault as earth faults are not applicable on this product.

System wiring overview

Quantec can be compared to a very sophisticated analogue addressable fire alarm system where the integrity of the wiring is of paramount importance.

As with any networked system, voltage drop can be a severe problem, especially if the power to operate the system's devices is taken from the network itself, as is the case with Quantec. Another problem is the potential failure of the entire network should the wiring fail, especially in the event of a short circuit.

Because Quantec needs to provide considerably more power and data down the network than an addressable fire alarm system, it is impractical to wire Quantec in the same way (i.e. as a continuous ring with 'Loop Isolators').

It is common practice within the call industry to use low voltage signal cable. This cable is more prone to mechanical damage / poor installation than, say, MICC cable. Therefore some way of protecting the network against catastrophic failure must be implemented.

Consequently our **ONLY** recommended method of wiring Quantec involves the use of 'Network Splitters'. These devices have 6-fused 'limbs' for the wiring of individual sections of the system and they provide a convenient way of wiring, testing and protecting the system. In addition to simplifying the wiring, the Network Splitter's fault and power LEDs also

assist the location of installation faults.

Each network splitter has one input and one output network connection (both UNFUSED) and six 'limb' outputs that are FUSED.

The unfused connections are for the connection of the network 'Spine' which is typically wired in low resistance 1mm^2 to 2mm^2 T&E cable (see Quantec General Purpose Wiring Instructions for details). It is important to maintain the integrity of this part of the network since any short circuit faults WILL cause a total collapse of the network until the fault is rectified.

DO NOT wire any networked devices to the spine other than Network Splitters.

The fused outputs i.e.'Limbs' are for the connection of individual circuits containing networked devices. These should be wired in four core security cable.

When wiring to a network splitter, ALWAYS remove the plug-on connectors from its PCB and reconnect them only when the wiring is secure in the terminal block. Failure to so could result in the terminal block twisting and rupturing the soldered joint and the PCB being damaged.

Each splitter has two indicators on its double gang fascia plate - 'Power' and 'Fault'. **'Power'** indicates that power is being supplied to the network and **'Fault'** indicates that one of the circuits in use on that splitter has a blown fuse. (N.B. unused circuits may have their fuses removed without showing a fault).

No more than 64 addressable devices can be connected to each network splitter. Consequently four splitters are capable of accommodating an entire system. However, for larger systems and for convenience it is recommended that more should be used.

There are many different cabling scenarios with varying lengths of cable and numbers of system devices attached to each spine/splitter combination(s), all capable of operating with different levels of simultaneous calls.

For this reason only one general purpose scenario is explained in detail. This is described in our Quantec General Purpose Wiring Instructions (document no. DNUQ171717) and we strongly recommend you read this document before proceeding.
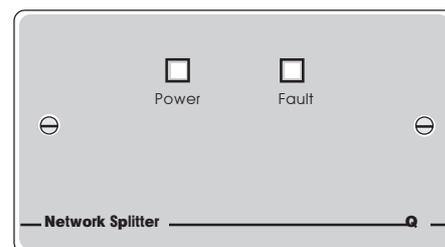
A Quantec Network Splitter

Mounting the enclosure

The controller is supplied with a plastic hinged lid, a metal back box and three separate PCBs, the relative location of which is indicated in Figure 1 below.

Figure 1 : PCB layout

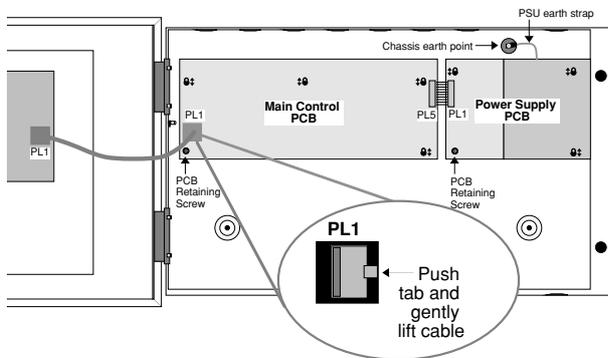The controller <u>must</u> be sited internally in an area <u>not</u> subject to conditions likely to affect its performance, e.g. damp, salt-air, water ingress, extremes of temperature, physical abuse, etc. The liquid crystal display on the enclosure's front should ideally be situated at eye level.

The controller can be surface or semi-flush mounted (see *figure 3, bottom right*) and can be located anywhere on the network, although it is normal practice to install it centrally or in the manager or matron's office.

Exposing the base mounting holes

To expose the controller's base mounting holes, its two base PCBs must first be removed. It is also recommended that the hinged lid is removed to prevent accidental damage during the fixing process.

To remove the lid: -

• Take the controller out of its box and undo the two screws on the right hand side of the lid using the allen key provided.

• Hinge the lid 180° to the left (do not overbend the hinges).

• Disconnect the lid/base connecting cable (PL1) from the Main Control PCB. Care should be taken when detaching this connector to depress the telecoms-style locking tab to prevent damage (see the inset in figure 1 above).

• Carefully remove the four M4 retaining nuts that secure the hinges.

To remove the base PCBs: -

• Ensure power has been removed from the panel and that the PSU PCB is safe to handle (see page 6 for further details).

• Disconnect the connector cable (PL5) on the Main Control PCB.

• Pull the PSU earth strap off the spade connector at the main chassis earth point.

• Carefully undo the PCB retaining screw located at the bottom left hand side of the relevant PCB using a crosshead screwdriver.

• Push the PCBs up and then forwards over the mounting pillars taking care not to damage any of the components.

The controller's lid and base PCBs can now be removed from site to prevent accidental damage.

Please note: The base PCBs are static-sensitive and relevant anti-static handling precautions must be observed when handling them. Refer to Appendix 3 for further details.

Decide carefully how the wiring will be brought into the panel with reference to figure 2 below and remove the required knock-outs for cable entry. Always ensure that if a knock-out is removed, the hole is filled with a good quality cable gland. Any unused knock-outs must be securely blanked off.

It is essential that the 230Va.c. cable comes into the enclosure via one of the inlets at the top right hand corner of the enclosure. For further CRITICAL information on mains connection please refer to page 6.

Using the four mounting holes, fix the base securely onto/ into the wall. The mounting holes are suitable for use with No.8 roundhead or countersunk woodscrews. Assess the condition and construction of the wall and use a suitable screw fixing. Any dust or swarf created during the fixing process must be kept out of the controller and great care must be taken not to damage any wiring or components.

Figure 2 : Internal view of back box (with PCBs removed) showing mounting holes, knockouts and earthing points
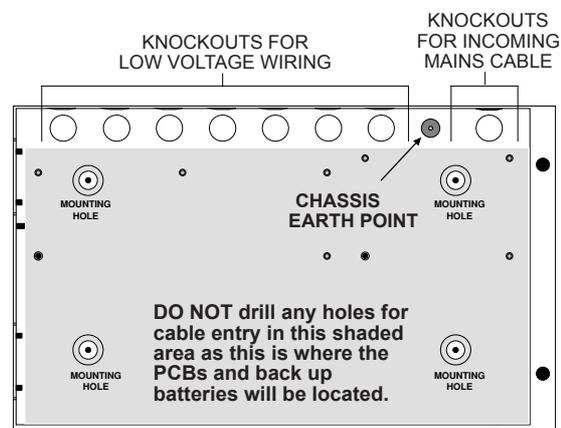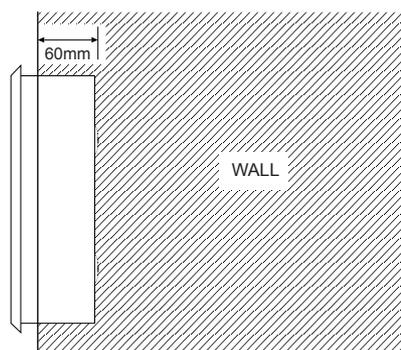

Figure 3: Semi-flush mounting diagram

Connecting the panel

The Power Supply PCB

> THIS UNIT MUST BE EARTHED

The controller's PSU combines the functions of a power supply unit, battery charging unit and battery monitoring unit. It is a 185-265Va.c. 50-60Hz off line switched mode PSU which stores hazardous voltages of up to 400Vd.c.

Mains connection

DO NOT connect mains to the PSU until the installation is complete and all the PCBs are correctly attached, the lid/base connecting cable is in place and all retaining screws are firmly fastened down.

The general requirement for the mains supply to the controller is fixed wiring, using three core cable (no less than 0.75mm^2 and no more than 2.5mm^2) or a suitable three conductor system that meets the appropriate national wiring regulations.

The panel should be fed from an isolating switch fuse spur, fused at 3A. This should be secure from unauthorised operation and be marked "CALL SYSTEM : DO NOT SWITCH OFF". This mains supply must be exclusive to the Quantec controller.

Correctly terminate the incoming cables as shown in *figure 4 below*. If required, the 5mm connector block (CONN1) can be pulled from the PCB for ease of installation. Ensure that the incoming mains earth is connected directly to this connector block and NOT to the chassis earth point.

The PSU PCB is connected to the Main Control PCB by a 10-Way pitch connector. This connects from PL1 on the Power Supply PCB to PL5 on the Main Control PCB.

Primary Fuse: 20 x 5mm 1A HRC Ceramic to IEC 127 (EN60127 Pt 2).
Battery & Output Fuses: 20 x 5mm 3A F to IEC 127 (EN60127 Pt 2).
DO NOT USE ANY OTHER TYPE OR SIZE OF FUSE IN THESE POSITIONS

Standby battery connection

The power supply PCB contains circuitry that not only charges stand-by batteries, but also measures the condition of them to protect against deep discharge.

One feature of this circuitry is that it allows the installer to power the system without connecting the mains supply. For this to work, two fully charged 12V VRLA batteries should be connected in series, as shown below (always ensure correct polarity connection).
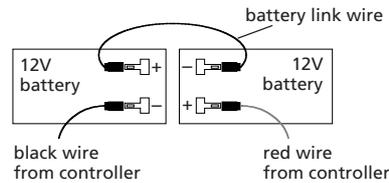
Pressing the 'Battery One Shot Button' for 2-3 seconds allows the PCB to measure battery voltage and, if everything is okay, to activate the system circuitry. Checking the LCD display whilst pressing the button will report any poor battery conditions.

IMPORTANT: When Quantec is powered up for the first time, the controller may need to reset its Configuration Data to default values. The message 'Fit NVM Link, or 'E' to Abort' will be displayed. When the NVM link is fitted the message 'INITIALISING DATA, PLEASE WAIT' will flash on the display. This procedure may take up to 1 minute and MUST be completed before Quantec will operate properly.

Figure 4 : Mains connection

PSU earth strap
Do not operate the controller without this strap connected

Mains cable must be segregated from other cables and should only enter the controller through either of these two knock-outs. Good quality cable glands must always be fitted.

Chassis earth point
Do not remove spade

OUTPUT FUSE 3AF

1A HRC   CONN1 L ⏚ N
PRIMARY FUSE

N
E
L

EARTH FAULT LED
Normally lit.
Please ignore - earth faults are not applicable on this product.

BATTERY FUSE 3AF

Protective cover
This cover protects against accidental contact with circuit components that may be charged at up to 400Vd.c.

DO NOT ADJUST

L   ⏚   N

Incoming mains cable earth must be connected to the terminal marked ⏚ and not the chassis earth point. (The PSU earth strap connects the earth to the chassis earth point).

PSU PCB retaining screw
This must be secured tightly before operation

Battery one-shot button

Battery back-up supply

Hazardous voltages present LED
When lit red, hazardous voltages will be present on the components in the shaded area of the PCB. When power is removed, this charge is bled away. Only when you have seen the red light extinguish can you be sure the charge has leaked away to a safe level.

The Main Control PCB

The Main Control PCB includes all the terminals required for the connection of the network wiring and optional system ancillaries such as printer/PC/paging equipment. It also features a 4 way pitch connector for the connection of an IBM compatible PC for programming purposes. Information on how to wire all of the above can be found in figure 5 below. The Main Control PCB is connected to the Power Supply PCB via a 10-Way pitch connector (PL5) and to the Front Panel Display and Switch PCB via an 8-way telecoms style cable (PL1).

Figure 5 : Main Control PCB connection details
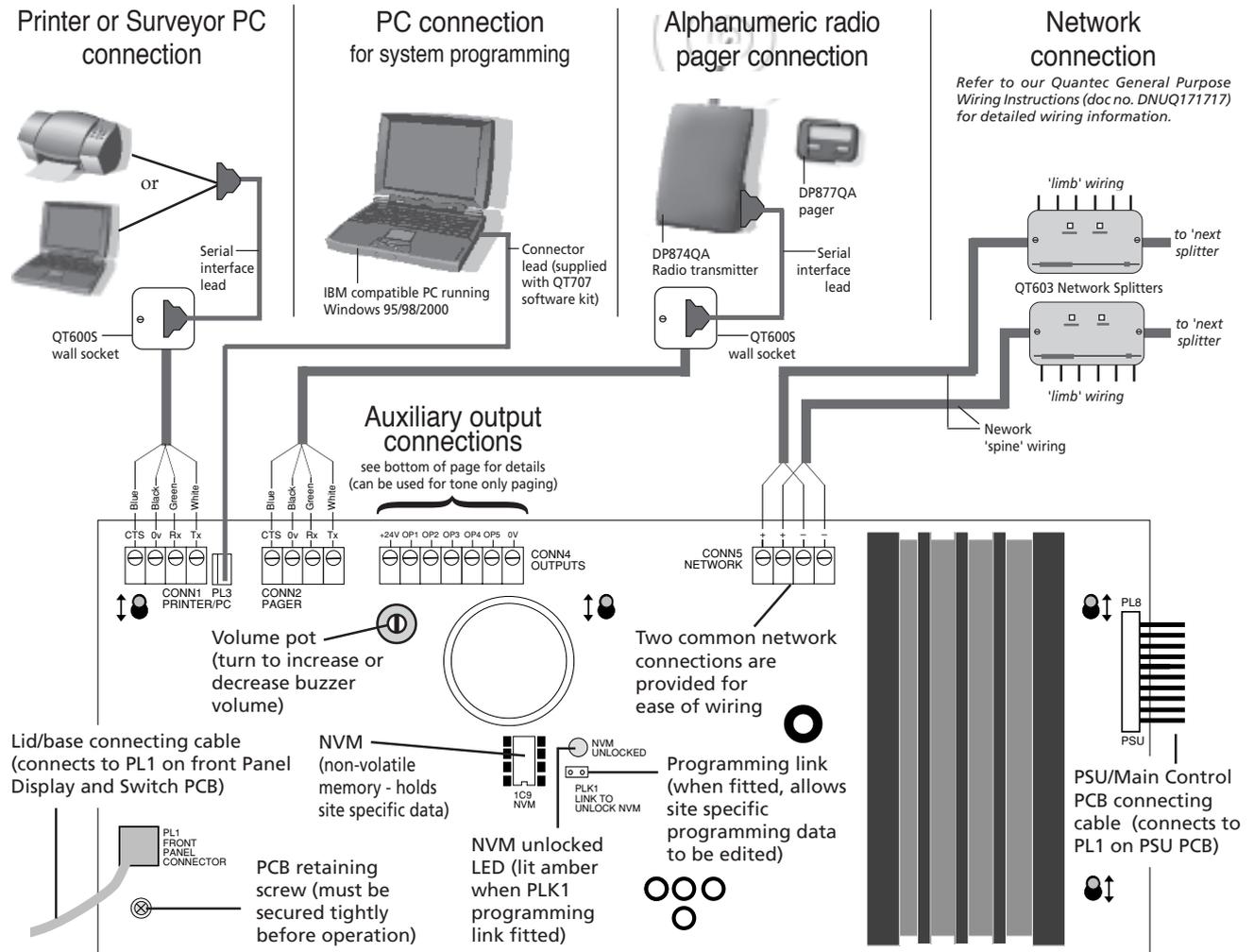
Printer/ PC connection

CONN1 is provided for the connection of a standard 80 column RS232 printer (required if you wish to keep a permanent record of data from the controller's datalogger) or a PC (required if you wish to utilise our new Quantec Surveyor data management software, as detailed on page 3).

Most 80 column RS232 printers will work provided they are set up as follows: data word = 8 bit; stop bit = 1; baud rate = 9600; parity = none. If in doubt, a pre-tested Printer Kit c/w printer, wall socket and interface lead is available, part no. QT600P.

Our QT707S Surveyor software requires a PC running Windows 98, 2000 or XP and is supplied with a CD, wall socket and interface lead.

Laptop PC connection (for programming)

If you wish to program Quantec using its upload/download software, an IBM compatible PC running Windows 95, 98 or 2000 should be connected to the PCB as shown. Our QT707 software kit includes a lead with a 9-way serial port connector.

Alphanumeric radio pager connection

Alphanumeric radio paging can be achieved using a DP874QA transmitter connected to the PCB via a QT600S wall socket as shown above (the DP874QA includes a wall socket and interface lead). Pagers are also available, part no. DP877QA.

Auxiliary output connection

A typical application for the controller's auxiliary outputs is to introduce tone only paging equipment onto the system, to drive strobes or interface to other systems. See Appendix 4 for typical wiring information.

The Quantec Concept

In today's modern healthcare environments, it is usual for staff in nursing homes and hospitals to be responsible only for certain areas of the building dependent on factors such as layout, type of care, staff to patient ratios, etc. Thus, in order to create an effective call system, all call points and monitoring points within the building need to have their messages "routed" only to the displays relevant to certain staff.

Quantec does this by setting all the call points within one part of the nursing home as one area, and all the call points within another part of the building as another area. Similarly, displays are set as members of different groups, again dependent on their location within the building. The object of grouping devices in this manner is to allow simple routing equations which describe how messages are directed around the system by the Quantec controller.

However, before being set as members of an area or group, all devices on the network (apart from ancillary devices such as slave overdoor lights and ceiling pulls), need to be given a unique address (ID) number so they may be identified by the controller.

The example illustration of a nursing home (below) explains in simple terms how the above concept can be applied. The method of routing shown is one of several variations which may be set up.

All calls made from Bedrooms 1 to 6 and Lounge 1 will be dealt with by staff located in the West Wing. Therefore, all the call points/monitoring points in the West Wing (devices 10-17) are assigned as members of one **Area** (Area A) and all displays in West Wing (devices 2 and 3) are assigned as members of one **Group** (Group 1). A similar scenario applies to the East Wing, the Central area and the South Wing.

It is virtually impossible for conventional call systems to meet this requirement without the inclusion of expensive, multi-zone 'repeater' panels and extremely careful planning. Basic addressable call systems can achieve this a little more easily but, as they are still essentially 'dumb' systems, many fail to take into account the varied needs of the user.

Quantec, with its four levels of call, built-in datalogger and sophisticated data protocol, is much more flexible. For example, it is possible to programme the addressable overdoor light outside the West Wing (device 7) so it will indicate when a call has been made from any calling devices in Area A.

Therefore, just as the calling devices in the West Wing need to be assigned as members of an **Area** and Displays in the West Wing need to be assigned as members of a **Group**, each addressable overdoor light needs to be assigned as a member of a **Zone**. (If used, Addressable Sounders should also be assigned as members of a Zone).

By referring to the nursing home installation plans it is possible to determine the Area, Group and Zone sets for the entire site, and plot them onto a Device Assignment Table, similar to the one shown on the following page:

Example nursing home illustration
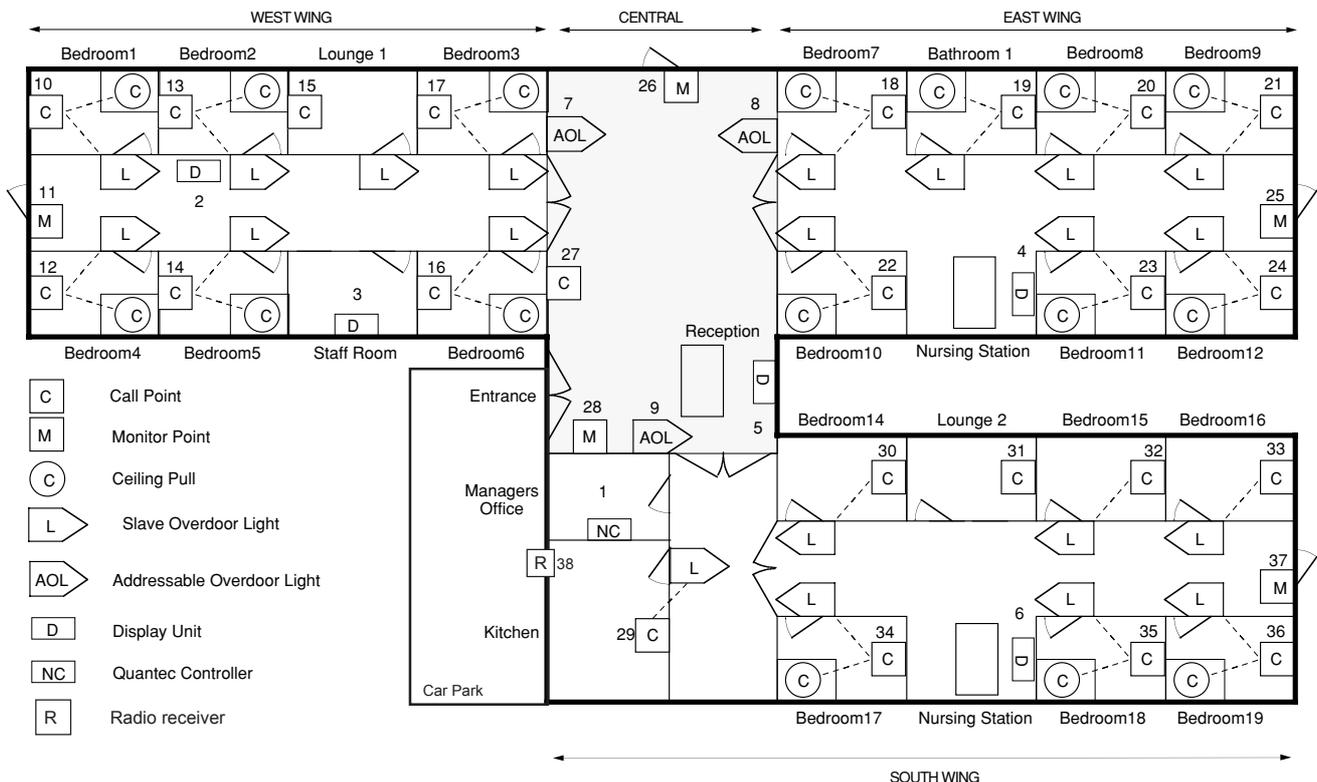
Quantec DEVICE ASSIGNMENT TABLE

DEVICE		Call Point AREA	Display GROUP	Addressable Overdoor Light ZONE	PLACE DESCRIPTION	
Number	Type				Name	Number
1	MAIN		4		Display	NET1
2	D		1		Display	1
3	D		1		Staff Room	1
4	D		2		Display	2
5	D		3		Display	3
6	D		4		Display	1D
7	Z			1	O D Light	1
8	Z			2	O D Light	1
9	Z			3	O D Light	6
10	C	A			Bedroom	WW1
11	M	A			Exit	WW1
12	C	A			Bedroom	WW4
13	C	A			Bedroom	WW2
14	C	A			Bedroom	WW5
15	C	A			Lounge	WW1
16	C	A			Bedroom	WW6
17	C	A			Bedroom	WW3
18	C	B			Bedroom	EW7
19	C	B			Bathroom	EW1
20	C	B			Bedroom	EW8
21	C	B			Bedroom	EW9
22	C	B			Bedroom	EW10
23	C	B			Bedroom	EW11
24	C	B			Bedroom	EW12
25	M	B			Exit	EW1
26	M	C			Exit	CEN1
27	C	C			Annexe	CEN2
28	M	C			Entrance	CEN3
29	C	D			Kitchen	1
30	C	D			Bedroom	SW14
31	C	D			Lounge	SW2
32	C	D			Bedroom	SW15
33	C	D			Bedroom	SW16
34	C	D			Bedroom	SW17
35	C	D			Bedroom	SW18
36	C	D			Bedroom	SW19
37	M	D			Exit	SW1
38	R	D			Car Park	EXT

Max. no. of devices = 255; Max. no. of areas = 26; Max. no. of groups = 32; Max. no. of zones = 64
D = Display; Z = Addressable Overdoor Light or Sounder; C = Call Point; M = Monitoring Point; R = Radio Receiver

The Device Assignment Table can be used as reference aid when programming the system. However, before programming can begin, the day-to-day requirements of the call system must be ascertained from the client to enable the routing relationships between the various Areas, Groups and Zones to be determined.

The Requirement: At night, when fewer staff are on duty, calls need to go to different nursing stations than during the day, i.e. from unmanned nursing stations to staffed locations.

The Solution: Two different routes can be programmed into Quantec - a primary route (to specify which call areas sound where during daytime hours) and a night route (to specify which call areas sound where at night). Quantec can be programmed to enter and exit night mode either automatically or manually by an authorised member of staff.

For the example nursing home highlighted earlier, it may be decided that the routing relationship between Areas and Groups needs to be as follows:

| AREA A West Wing Calling Devices | AREA B East Wing Calling Devices | AREA C Central Calling Devices | AREA D South Wing Calling Devices |

| GROUP 1 West Wing Displays | GROUP 2 Central Displays | GROUP 3 East Wing Displays | GROUP 4 South Wing Displays |
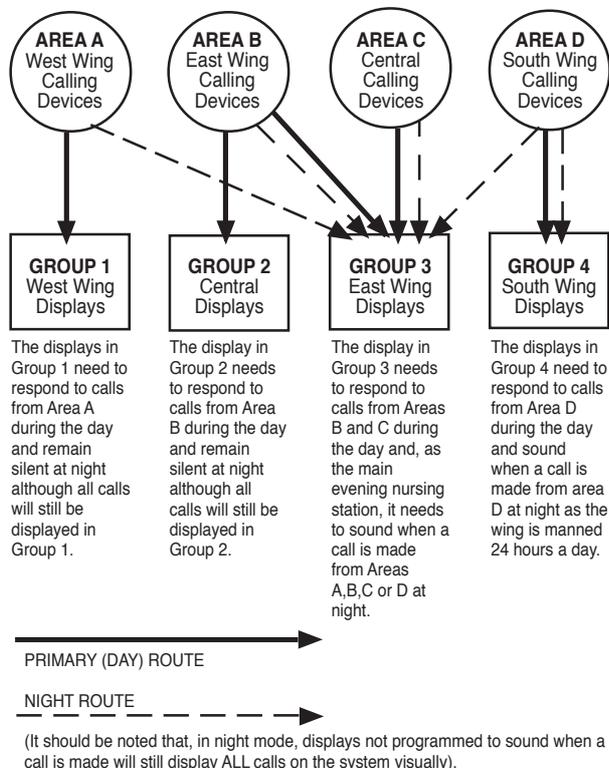
The displays in Group 1 need to respond to calls from Area A during the day and remain silent at night although all calls will still be displayed in Group 1.

The display in Group 2 needs to respond to calls from Area B during the day and remain silent at night although all calls will still be displayed in Group 2.

The display in Group 3 needs to respond to calls from Areas B and C during the day and, as the main evening nursing station, it needs to sound when a call is made from Areas A,B,C or D at night.

The displays in Group 4 need to respond to calls from Area D during the day and sound when a call is made from area D at night as the wing is manned 24 hours a day.

PRIMARY (DAY) ROUTE →

NIGHT ROUTE - - →

(It should be noted that, in night mode, displays not programmed to sound when a call is made will still display ALL calls on the system visually).

In night mode, any call point which has a 'call follower sounder' installed (optional) and is in the 'presence' state will indicate that another call has been initiated by emitting a soft tone.

The Requirement: Although each wing of the nursing home will be staffed independently, if a call is not answered within a certain period of time, it must be automatically flagged elsewhere in the building to ensure a response. Similarly, if a nurse has to leave her nursing station, she must be able to manually divert calls in her absence.

The Solution: Quantec can be programmed to divert calls from one group of displays to groups located elsewhere, either automatically (after a pre-determined time) or manually. For instance, if any call signalled to Group 1 displays is not answered after 1-8 minutes (adjustable) it can be programmed to automatically divert to displays in, say, Groups 2 and 3. Once the routing relationships between Areas and Groups has been decided they should be programmed into a Group Routing table, similar to the example shown below (for details of how to set the time-outs for automatic divert, refer to the 'Programming Quantec' section).

Quantec GROUP ROUTING TABLE *(max. 8 areas/groups per set equation)*

GROUP	PRIMARY AREAS	NIGHT AREAS (BEEP)	DIVERT TO GROUPS
1	A		2, 3
2	B		
3	B, C	A, B, C, D	
4	D	D	

The Requirement: In addition to standard slave overdoor lights positioned outside rooms a method of visually guiding staff along small off-shoot corridors to the source of a call is also required.

The Solution: Quantec's addressable overdoor lights can be programmed to respond to calls from any area(s) just as groups of Displays can. For instance, the addressable overdoor light in Zone 1 of the example illustration needs to respond to all calls from Area A. It is possible to programme a series of strategically placed addressable overdoor lights to lead staff directly to the source of a call by putting up to eight areas in the Area equation, i.e. 'Follow My Leader' lights.

For each Zone there are, in fact, two equations - one for Areas and one for Devices. The device equation would be used if an addressable overdoor light was positioned outside a room with more than one call point or where (say, in a refurbishment) only two wires are available. By including the device numbers of the relevant call points within that room in the device equation, the addressable overdoor light will illuminate when a call is made.

Once the routing relationships between Zones, Areas and (if applicable) devices has been decided, they should be programmed into a Zonal Routing Table (see example below).

Quantec ZONAL ROUTING TABLE *(max. 8 areas/devices per equation)*

ZONE	AREA EQUATION	DEVICE EQUATION
1	A	
2	B	
3	D	

The Requirement: Although standard patient and 'help required' calls should be flagged in each independently staffed wing, to ensure a swift response to any emergency or attack calls, these should be flagged throughout the nursing home as soon as they are made.

The Solution: Emergency and/or attack calls can be sent out either locally or globally during the day, dependent on each client's specific requirements. If 'Local' is chosen, the calls are sent only to the display Groups set up in the routing table. Alternatively, if 'Global' is selected, the calls are sent out to every display on the network. (Refer to the 'Programming Quantec' section beginning on the next page for further details).

The Requirement: To assist in the efficient running of the nursing home and to combat any accusations from patient's relatives that calls are not being answered quickly enough, a reliable form of evidence is required to prove that nurses are attending to patients as quickly as possible.

The Solution: Quantec's network controller includes a built-in datalogger which, if selected, will record all activities on the call system, including calls, resets and faults.

Programming Quantec

Before programming commences, we recommend you read 'The Quantec concept' section on pages 8 to 10. Commissioning is the most critical part of the installation and a basic understanding of how Quantec works and the thinking behind it is essential.

Programming methods

The controller can be programmed using two methods:-

(1) Using its front panel buttons and LCD display

Although time consuming, all aspects of programming can be undertaken using this method and no other piece of equipment is required.

(2) Using the Quantec upload/download software

Allows quick and easy input of data and routing arrangements via an IBM compatible PC. This method is much quicker than method 1 and provides the added bonus of allowing off-site programming if the relevant details are available and the archiving of programming information for future reference.

Only the first method is covered in detail in this manual. Information on how to programme Quantec using its upload /download software can be found in the separate instructions and help files supplied with the software.

The efficiency with which the programming function is carried out depends on: -

- The accuracy of information received regarding the wiring and devices fitted.
- The freedom of the installation from faults and errors.
- The completeness of the information received from the client/specifier as regards text information and the manner in which the equipment is to operate.

The only factor normally within the control of the programmer is the final item and even if this is done perfectly, the quality of the installation will always be based upon the quality of the first two factors. To help ensure that the information received is as complete as possible, we recommend the installing contractor is provided with the following documentation before starting the job:-

- Quantec General Purpose Wiring Instructions (approved document no. DNUQ171717)
- Quantec Pre-Commissioning Instructions (approved document no. DNUQ1818PRE).

Both of these documents have sections in them that should be completed by the installing contractor prior to handover.

Typical programming sequence

A full explanation of Quantec's programming functions can be found on the remaining pages of this manual. The actual commissioning sequence used will vary depending on the information available and personal preference. However we recommend it follows a similar pattern to that described in the next column:-

IMPORTANT: When Quantec is powered up for the first time, the controller may need to reset its Configuration Data to default values. The message 'Fit NVM Link, or 'E' to Abort' will be displayed. When the NVM link is fitted the message 'INITIALISING DATA, PLEASE WAIT' will flash on the display. This procedure may take up to 1 minute and MUST be completed before Quantec will operate properly.

(1) Power up the system and assign the devices on the limbs by whichever method you prefer. Experience shows the easiest way to do this is using the controller's AutoScan function. This sequentially assigns the next available ID location to unassigned devices as they are operated and allows the system to be programmed very quickly. *(Refer to programming subsection 1.2).*
Hint: When autoassigning the system, plan your route around the building on a drawing, marking on it the device numbers you anticipate will be assigned to each networked device. It is advisable to assign each limb one at a time, periodically stopping the autoassign function to check that a particular device is programmed as anticipated. A handy way of doing this is to programme a display and then press the A button which will display its ID number. Whilst the autoassign function is active, pressing a call button on any unassigned device will automatically assign the next available device number to it - beware of plumbers pressing buttons at the far end of the building!

(2) Verify that the devices are programmed correctly by checking the last assigned number at the controller or by using the display device function. Once a device is programmed, it retains its ID even when power is removed. If programmed by mistake, you must reset the ID to unassigned by shorting the two Reset ID pins on the networked device PCB whilst it is powered up.
Note: Once a device's ID number has been reset, it enters the unassigned state. At this point the old ID number must be deleted from the controller as it will try and scan for the device and not be able to find it. See Editing Existing Devices (section 1.3)

(3) Print off a list of devices. If you don't have a printer you must write this information down by scrolling through the device assignment table at the controller. This initial list (if you are using a printer), will show no names attached to the devices and can be given to the client so they can write down what they wish to call each device.
Note: 45 custom and 40 pre-set place names are available - see editing custom texts (section 1.4) for details.

(4) Discuss with the client all the routing options for calls (i.e. night mode operation, splitting of network into manageable areas, the routing of calls to different displays, divert /autodivert functions, timeouts, logging options, etc). Most options are highlighted in the Quantec Concept section of this manual.

(5) Program in the names and operating modes, routing tables, etc, as agreed with the client *(refer to programming subsections 1.3 - Editing Existing Devices, 1.5 - Assigning or Editing Area/Group Relationships, 1.6 - Setting up Addressable Overdoor Lights / Sounders, 1.7 - Editing custom texts and section 2 - The System Set-Up Menu).*
Note: All Call Points / Monitoring Points default to Area A; all Displays default to Group 1 and all Addressable Overdoor Lights / Sounders default to Zone 1. Group 1's routing equation defaults to Area A, Group 2's routing equation defaults to Area B, etc. Zones have no routing data by default.

(6) Print off a full list of the system devices and programming set-up data and verify it is as planned. Correct any errors as necessary. Print and keep a copy of the set-up for reference.
Hint: If you don't have a printer, the above lists must be derived manually by scrolling through the controller and writing the list down.

Overview of access levels

Three access levels are available at the Quantec controller: general user (access level 1), authorised user (access level 2) and engineer (access level 3).

All programming functions are located in access level 3 and can be accessed by inputting a four digit code at the controller (default = 3 3 3 3). *The controller will automatically exit access level 3 after a period of 1 hour has elapsed.*

Entry to access level 2 requires the input of a different code (default = 2 2 2 2) whilst entry to access level 1 does not require an access code. *Access level 2 will automatically exit after 5 minutes without a key press.*

The menu options available are shown on the menu tree below and are described in detail in the following documents:-

Access level 1: Quantec Users Guide (DNUQ111111)
Access level 2: Quantec Manager/Matron's Guide (DNU6012005)
Access Level 3: Quantec Programming Manual (i.e. this manual - refer to the subsection number below each menu option for detailed information on that feature)

It should be noted that The 'NVM' link (located on the Main Control PCB) must be fitted during the programming process. This unlocks the non-volatile memory on the controller and allows site specific data to be modified.
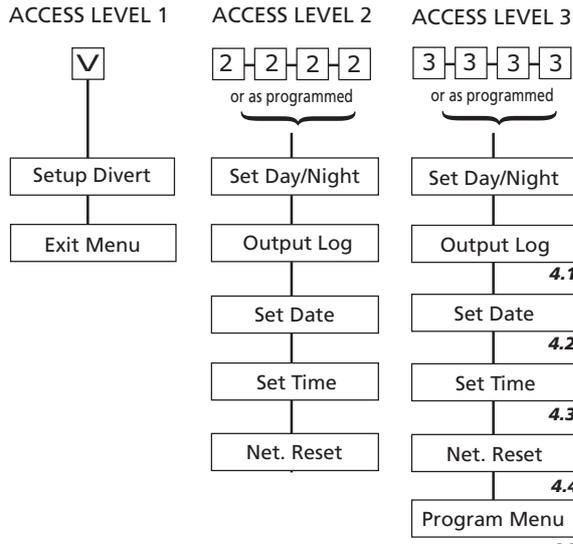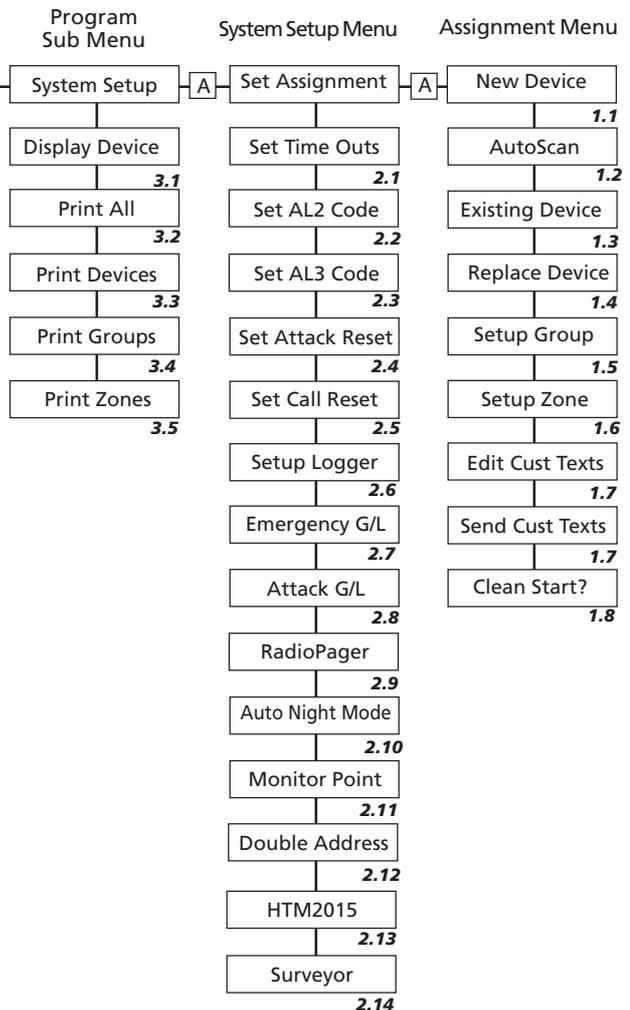
Access Level 3 Programming Functions

1.0 The Assignment Menu

The Assignment Menu allows the introduction of unassigned devices onto the network and the setting up of routing arrangements for areas, groups and zones. It also allows the parameters of any existing device, including its name, to be changed.

1.1 Assigning Individual Devices

Move through the menus to the Assignment Menu and accept the New Device prompt. The next unused ID number will be presented:-

> New Device
> Number to be 002

This can be altered if required using the scroll keys, but it is usual to accept this prompt. (Network devices can be assigned any ID number from 2 to 255. Address 1 is always allocated to the Quantec controller). After pressing the Accept key, the next prompt is to activate the new device:-

> Activate Device
> 002 or ESC

When the unassigned device is activated, the controller will respond by showing the type of device in code form, e.g.

> Device 002 CLPT
> Select Area A

(CLPT = Call Point; DISP = Display; MNPT = Monitoring Point; ZNID = Addressable Overdoor Light/Sounder)

Use the scroll and Accept keys to enter the appropriate Area, Group or Zone with reference to the 'Device Assignment Table' on page 23 onwards). Once the relevant Area, Group or Zone has been accepted, a location prompt will appear:-

> Device 002 CLPT
> - - - - - - - - - -

Using the scroll and Accept keys, the device can now be given a place name from the list of locations (see Appendix 1 for a list of Quantec's 40 pre-set place names and note that it is also possible to program up to 45 custom place names using the 'Edit Cust Texts' function described in section 1.7). On pressing the Accept key, your choice will be confirmed, e.g.

> Device 002 CLPT
> TV Room   ----

By using the scroll and Accept keys, four single alphanumeric characters can now be tagged onto the end of the place name.

All four terms must be accepted, even if they are blank (e.g. a TV room in the East Wing could be TV Room EW01). When the final character has been accepted, the "Assign New Device" prompt reappears. Note, exiting this option before the final character has been accepted will cancel the description change.

1.2 Assigning Multiple Devices

Assigning many individual devices using the 'New Device' function can be very time consuming. Therefore, an 'AutoScan' method is available for assigning multiple devices.

Move through the menus to the Assignment Menu and Accept the 'Autoscan' prompt. The controller is now waiting for a call from any unassigned device:-

> AutoScan Mode
> Waiting for call

Activate the first unassigned device in the sequence to be programmed, at which point the controller will assign the next available ID number from 2 to 255. (Address 1 is always allocated to the controller).

In Autoscan mode the Area, Group or Zone membership and location description data is not entered immediately. Instead all outstanding devices can be activated sequentially. As each device is activated it is assigned an ID number automatically and, for reference purposes, the last device ID number is displayed on the controller.

HINT: When programming a site with many devices, it is recommended you keep a list of each ID number as each device is activated and check at regular intervals with the controller that the last ID numbers entered correspond. If they do not, either a mistake has been made or someone has operated an unassigned device elsewhere in the building. (If this is the case, refer to sections 1.3 - Editing Existing Devices, 1.4 - Resetting a Device ID Number and 3.1 - Display Device)

When the Autoscan sequence is complete exit the Autoscan menu. At this point all assigned devices have default set memberships and no location descriptions. To add/change these refer to section 1.3.

1.3 Editing Existing Devices

The parameters of any device already on the system can be reassigned at any time. Alternatively, devices may be temporarily disabled (for maintenance purposes) or deleted from the system altogether.   One of the prime uses of the 'Existing Device' function is to change the default (blank) settings given to devices entered onto the system via the Autoscan facility.

To edit, move through the menus to the Assignment Menu and accept the 'Existing Device' prompt. The details of one of the devices on the system will then appear, e.g:-

| Device 002 CLPT | (the type of device, location and set descriptions may vary depending on the parameters previously assigned) |

Use the scroll keys to select the ID number of the device you wish to change. A number of options will then appear, e.g:-

| Device 002 ReAss
Del Disab or Esc |

Use the keys to either reassign the parameters of the device, delete it from the system or disable it. (Please note, if the device has previously been disabled, an 'Enable' option will appear). If the "ReAss" prompt is accepted, the controller responds by showing the type of device in question in code form, e.g:-

| Device 002 CLPT
Select Area A | (CLPT = Call Point; DISP = Display;
ZNID = Addressable Overdoor Light or Sounder) |

Use the keys to enter the appropriate Area, Group or Zone with reference to the 'Device Assignment Table' on page 23 onwards. Once the relevant Area, Group or Zone has been accepted, a location prompt will appear, e.g:-

| Device 002 CLPT
- - - - - - - - - - - - |

Using the scroll and Accept keys, the device can now be given a place name (see Appendix 1 for a list of Quantec's 40 pre-set place names and note that it is also possible to program up to 45 custom place names using the 'Edit Cust Texts' function described in section 1.7). On pressing the Accept button, your choice will be confirmed, e.g:-

| Device 002 CLPT
TV Room   ---- |

By using the scroll and Accept keys, four single alphanumeric characters can now be tagged onto the end of the location. All four terms must be accepted, even if they are blank (e.g. a TV room in the East Wing could be TV Room EW01). Exiting this option before the final character has been accepted will cancel the description change. When the final character has been accepted, the "Assign New Device" prompt reappears:-

| Device 002 ReAss
Del Disab or Esc |

Additional devices can now be edited, or to return to the Assignment Menu, press Escape.

1.4 Replacing a faulty device

This new maintenance function allows you to replace a faulty device with a new one without having to delete its name, location and area, group or zone details from the system.

To execute, select the 'Replace Device' prompt from the assigment menu. The controller will respond with a message similar to the one below:-

| Device 002 CLPT |

Use the scroll keys to select the ID number of the device you wish to replace and press accept. Depending on the ID number you have selected, the following message will appear:-

| Activate Device
002 or Esc |

Activate the new device and await confirmation that it has been assigned. To check the replaced device's details are as expected, use the 'Existing Device' function described in section 1.3.

1.5 Assigning or Editing Area/Group Relationships

In order to route Areas (calling devices) to relevant Groups (displays), routing equations must be programmed into the Quantec controller. Move through the menus to the Assignment Menu and Accept the 'Setup Group' prompt. The following prompt will be displayed:

```
Select Group  001
Pri  Nite  Div  Esc
```

To set up or change the primary (Day) equation for Group 1 use the scroll keys to highlight "Pri" and press Accept. This equation describes to which Area(s) of calling devices the Group of displays will respond when Quantec is in day mode. Depending on data already entered, the following will appear:

```
Grp 01 Pri Mode
A
```
(Group 1 displays default to Area A; Group 2 to Area B, etc. These may be altered to suit the system).

Use the scroll and Accept keys to enter the appropriate Area(s) with reference to the 'Group Routing Table' on page 26. Up to eight areas can be selected for a group. All eight terms must be accepted, even if they are blank. Pressing escape before this process is complete will abort editing without making changes.

When the eighth term has been accepted the Select Group prompt will again be shown, e.g:-

```
Select Group  001
Pri  Nite  Div  Esc
```

To set up or change the Night equation for Group 1 use the scroll buttons to highlight "Nite" and press Accept.

When in night mode, Quantec routes all Areas to all Groups but only the display Groups that are programmed to beep in the 'Night' mode will do so. Use the scroll and Accept keys to enter the appropriate Area(s) with reference to the 'Group Routing Table' on page 26. All eight terms must be accepted, even if they are blank as pressing escape before this process is complete will abort editing without making changes.

When the eighth term has been accepted the Select Group prompt will appear again, e.g.

```
Select Group  001
Pri  Nite  Div  Esc
```

To set up or change the Divert equation for Group 1 use the scroll keys to highlight "Div" and press Accept.

This equation describes where calls from the selected Group should be diverted to if a call has not been accepted before a pre-determined time has elapsed or manual divert has been selected from the Display menu. By default, Divert equations are blank (i.e. divert will not operate). Use the scroll and Accept keys to enter the appropriate Area(s) with reference to the 'Group Routing Table' on page 26. All eight terms must be accepted, even if they are blank. Pressing escape before this process is complete will abort editing without making changes.

1.6 Setting up Addressable Overdoor Lights and Addressable Sounders

To route a call to the relevant Addressable Overdoor Light(s) or Sounder(s), Zone equations must be programmed into the system. Move through the menus to the Assignment Menu and accept the 'Setup Zone' prompt. The following prompt will appear:

```
Select Zone  001
Areas / Devices
```

Use the scroll and accept keys to enter the appropriate Areas/Devices with reference to the 'Zonal Routing Table' on page 27. The Zone equation describes to which Areas and/or devices the Zone will respond to in both primary (day) and night mode.

NOTE: Addressable overdoor lights and sounders can include both areas and individual calling devices in their routing equations. By default these Equations are blank. This means addressable overdoor lights and sounders will not function until their routing equations have been defined. A maximum of eight areas can be assigned to each group. All eight terms must be accepted, even if they are blank. Pressing escape before this process is complete will abort editing without making changes. In night mode, Addressable Overdoor Lights and Sounders are silent.

1.7   Editing and sending custom texts

Up to 45 custom place names* of up to 11 characters each can be added to Quantec's library of 40 pre-set place names (see Appendix 1 for a listing of the pre-set place names).

To add or edit a custom name, move through the menus to the Assignment Menu and accept the 'Edit Cust Texts' function. The following prompt will appear:

> Edit Text 01
> Custom 1

(the flashing text on the second line may vary depending on the parameters previously assigned)

Use the scroll and accept keys to select the custom text field you wish to change. On pressing the accept key you will be able to type over the existing text with up to 11 alpha-numeric characters using the scroll, accept and escape keys.

To help speed up the text entry process, in addition to upper and lower case letters A to Z, numbers 0 to 9 and symbols / - : and @, Quantec's text editing facility has a number of special characters, as listed below:-

C This clears the character you have selected and ALL characters to the right of it.

E This allows you to select the end input character on a particular field, i.e. SURGERY **E**.   When accepted, this saves you from having to enter blank characters all the way to the end of a text field.

D This deletes the character you have selected and moves ALL text to the right of it one position to the left.

I This inserts one space BEFORE the character you have selected

When the final character has been entered, the text on the second line will again begin to flash, e.g:-

> Edit Text 01
> Surgery
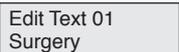
(the flashing text on the second line will obviously vary depending on the text you have entered)

Use the scroll keys to add/edit any additional custom place names or press escape to return to the previous menu.

To add the newly programmed custom names to Quantec's 40 pre-set place place names you must send them to the Displays' memories. To do this, move through the Assignment Menu to the 'Send Cust Texts' function and press accept. The following message will appear:-

> Sending Texts
> Please Wait
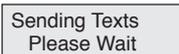
When the sending process is complete, the controller will automatically return to the assignment menu. The renamed custom text fields will now be available to the appropriate device naming functions (e.g. 'New Device' and 'Existing Device').

It should be noted that corridor displays with a software revision number of 1.5 or earlier will only accept 20 custom place names. If you wish to use more than 20 you must upgrade the displays to software revision number 1.6 or above.

1.8   Clean Start

Selecting this function forces the controller to reset all site data to the factory default settings. To prevent accidental implementation of this feature, a warning prompt and special code is required before the action can be started.

Move through the menus to the Assignment Menu and accept the 'Clean Start?' function. The following prompt will appear:

> Clean Start?
> Enter code?
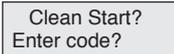
If you wish to proceed, the following sequence of keys should be pressed:-

∧ ∨ ∧ A

When the final key is pressed, the following message will appear for approximately three seconds:-

> All data will be
> lost! Continue?

Pressing the accept key before the above message disappears will instigate the clean start process. Depending on the amount of data stored, this could take some time.

2.0 The System Setup Menu

The System Set Up menu allows you to tell the Quantec controller specific details about how the system will work.

2.1 Setting 'Time Outs' for Call Divert and Call Accept arrangements

This utility allows you to tell Quantec the time that should elapse before a call is diverted from one group of displays to another or an unanswered 'accepted' call returns to displays. On selecting the 'Set Time Outs' prompt, the following window will appear:

> Divert: 1 mins
> Accept: 1 mins

Use the scroll and accept keys to enter the appropriate Time Out figure. The range for each facility is 1 to 8 minutes in steps of 1 minute. Any changes will be saved automatically.

2.2 Setting the Access Level 2 Code

This option allows you to change the four digit access code for Access Level 2 (this can be any combination of the 1, 2 and 3 keys). On selecting the 'Set AL2 Code' prompt, the following window will appear:

> Access Level 2
> Code :

Enter the new code as required. When the fourth key has been pressed, the controller automatically registers the code and returns you to the System Setup menu.

2.3 Setting the Access Level 3 Code

This menu allows you to change the four digit access code for Access Level 3 (this can be any combination of the 1, 2 and 3 keys). On selecting the 'Set AL3 Code' prompt, the following window will appear:

> Access Level 3
> Code :

Enter the new code as required. When the fourth key has been pressed, the controller automatically registers the code and returns you to the System Setup menu.

2.4 Setting the 'Attack Reset' code

For systems utilising Quantec's infra-red attack call level, this utility allows the four digit Attack Reset code to be entered or changed (this can be any combination of the scroll up, scroll down and accept keys). On selecting the 'Set Attack Reset' prompt, the following window will appear:

> Set Attack Reset
> Code:

Enter the new code as required. When the fourth key has been pressed the controller automatically registers the new code and returns you to the System Setup menu.

2.5 Setting the 'Call Reset' Code

This utility allows Quantec's four digit 'Call Reset' code to be entered or changed (this can be any combination of the scroll up, scroll down and accept keys). On selecting the 'Set Call Reset' prompt, the following window will appear:

> Set Call Reset
> Code:

Enter the new code as required. When the fourth key has been pressed the controller automatically registers the code and returns you to the System Setup menu.

2.6 Setting up the Datalogging facility

This utility allows Quantec's Datalogging facility to be set up. Select the 'Setup Logger' prompt and use the scroll and accept keys to choose one of the following options:

Logging OFF	this disables the logging facility so no events are logged or can be printed
Logging Man Only	this enables the logger to print when manually selected to do so
Logging Man/Auto Output on: 010	this enables the logger to print automatically after 10, 20, 30, 40, 50, 60, 70, 80, 90 or 100 events

Please note: If 'Man Only' is selected and the log record is not printed, the datalogger's memory will fill to capacity. When this occurs a warning message will appear on the controller and any new events will not be logged until the existing events have been printed.

IMPORTANT: When 'Surveyor' mode is active (see 2.14) logging settings cannot be altered.

2.7 Setting up Emergency call routes

This option allows you to set the system up so Emergency calls are sent to all display Groups (Globally) regardless of how the group area routing arrangements have been set up.

On selecting the "Emergency G/L" prompt, it is possible to scroll through the following two options:-

> Emergency Calls
> Sent: Locally

> Emergency Calls
> Sent: Globally

When you have selected the required option, press accept.

2.8 Setting up Attack call routes

This menu option allows you to set the system up so infra-red Attack calls are sent to all display Groups (Globally) regardless of how the group area routing arrangements have been set up. On selecting the "Attack G/L" prompt, it is possible to scroll through the following two options:-

> Attack Calls
> Sent: Locally

> Attack Calls
> Sent: Globally

When you have selected the required option, press accept to return to the System Setup menu.

2.9 Setting up the Radio Pager

If radio paging equipment is connected to the controller's RS232 paging terminal, this menu must be selected to enable it to operate. On selecting the "RadioPager" prompt, it is possible to scroll through the following options:-.

Pager DISABLED	accepting this disables all paging functions (no callls will be sent to pagers)
Pager ENABLED on ATTACK & Higher	accepting this enables paging on attack calls only
Pager ENABLED on EMERG & Higher	accepting this enables paging on emergency and attack calls only
Pager ENABLED on ASSIST & Higher	accepting this enables paging on help required, emergency and attack calls
Pager ENABLED on CALL & Higher	accepting this enables ALL levels of call (except presence)

It should be noted that different levels of calls are not prioritised by pagers. For example, if a standard call is triggered followed by an emergency call, the emergency call will not be displayed until the standard call has been accepted and the next message called up. Calls will however still be prioritised in the usual manner at QT608C corridor displays, i.e. highest priority calls first.

2.10 Setting up the AutoNight Mode function

This function allows Quantec's automatic night mode function to be enabled or disabled and for preset entry and exit times to be programmed into the controller. On selecting the 'Auto Night Mode' prompt, one of the following options will appear:-

Auto Night Mode	Auto Night Mode
Enabled? : NO	Enabled? : YES

Use the scroll keys to select the required option and press accept. Accepting YES enables the auto night mode function and allows you to enter the time you want the system to automatically enter night mode:-

> Entry time
> 07:30 pm

Use the scroll and accept keys to select the relevant hour, minute and am or pm. When the am/pm field has been accepted the controller prompts you to select an exit time at which the system will automatically return to day mode:-

> Exit time
> 07:00 am

Use the scroll and accept keys to select the relevant hour, minute and am or pm. When the am/pm field has been accepted the controller automatically returns you to the system setup menu.

Note:
1. If the Auto Night Mode function is disabled it is still possible to manually switch night mode on/off at Access Level 2.
2. When HTM2015 mode is active, Auto Night Mode is disabled.

2.11 Monitoring a network device

This function allows any ID address to be polled from the controller. When polling the address, the relevant device's confidence LED will flash or, in the case of an addressable sounder, its beeper will sound at the standard call rate.

First, select the "Monitor Point" prompt from the system setup menu. A window similar to the one below will appear:-

> Device 002 CLPT
> State=1 OK

Use the scroll keys to select the device ID number you wish to monitor (do not press accept as this will perform a network reset).

If the state field = '1 OK' : the device has been found by the controller and its confidence LED will be lit (or, in the case of an addressable overdoor light or sounder, its beeper will be sounding at the standard call rate.
If the state field = '0 OK' : the device has been found by the controller but it does not have a confidence LED or sounder that can be switched on, i.e. the device is probably a display.
If the state field is replaced by a message reading "No Response": the controller cannot find a device with the ID number you have selected.

Pressing Escape or Accept at any time will perform a network reset and return you to the system setup menu.

2.12 Determining the location of devices which are doubly addressed

Any doubly addressed devices on the system are automatically flagged on the right hand side of the controller's display, i.e:-

> DISABLED WC   (2)
> Double Addressed

The bracketed number (in this example '2') is the ID number of the doubly addressed devices (if there are more than one set of doubly addressed devices these will be flagged too). To ascertain the exact location of the doubly addressed devices, select the 'Double Address' option from the system setup menu. A window similar to the one below will appear:-

> Device 002 CLPT
> State=1 OK

All devices with the ID address shown will be polled from the controller and their confidence LEDs will flash or, in the case of addressable overdoor lights and sounders, their beepers will sound at the standard call rate.

Pressing the scroll keys will move you onto the next set of doubly addressed devices (if there are any) and their confidence LEDs and sounders will activate instead.

Pressing accept performs a network reset and returns you to the system setup menu.

2.13 Setting up HTM2015 Mode

This function allows Quantec's HTM2015 function to be enabled or disabled - see page 3 for important notes on this function. On selecting the 'HTM2015 Mode' prompt, one of the following options will appear:-

```
Set HTM2015          Set HTM2015
Mode : Enabled       Mode : Disabled
```

Use the scroll keys to select the required option and press accept. When Enabled, the controller adheres to certain aspects of the HTM2015 standard and the following changes occur:-

1. Auto Night Mode is disabled.

2. Day/Night Mode cannot be entered using the Controller's front panel menus. Instead, you must use a single remote Day/Night Mode Switch (a QT611 multi-purpose programmable device configured as a Day/Night Mode Switch).

3. The controller's internal sounder is disabled for call type signalling.

2.14 Setting up Surveyor Mode

This function allows Quantec's Surveyor Mode function to be enabled or disabled. On selecting the 'Surveyor Mode' prompt, one of the following options will appear:-

```
Set Surveyor         Set Surveyor
Mode : Enabled       Mode : Disabled
```

This mode is used in conjunction with Quantec's new 'Surveyor' data management software package, as described on page 3. When enabled, the controller's logging output is set to "output on every event" and cannot be changed and the "printer fault" message on the panel is suppressed when the PC is turned off or disconnected from the panel.

3.0 The Program Menu

3.1 Display Device

To aid the location of network devices for diagnostic purposes, it is possible to change the function of the controller's LCD display to show the calling device ID number instead of the place name.   Move through the menus to the Program Menu and Accept the 'Display Device' prompt. The following prompt will appear:

```
Display Device
Waiting for Call
```
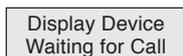
When a calling device is activated the ID number of that device will be shown on the display. (Please note, any other displays on the system will continue to show the location of the calling device as normal). On exiting this function the network resets itself in order to remove any missed calls from the controller.

3.2 Print All

Selecting this function sends a list of all site-specific data to a printer (if connected).

3.3 Print Devices

Selecting this function sends a list of all network devices to a printer (if connected).

3.4 Print Groups

Selecting this function sends a list of all groups (displays) to a printer (if connected).

3.5 Print Zones

Selecting this function sends a list of all zones to a printer (if connected).

4.0 The Secure User Menu

4.1 Set Day/Night

This function allows the routing of calls to be changed from the programmed day mode (primary) configuration to the night mode (nite) configuration or vice versa.   Enter access level three and accept the 'Set Day/Night' prompt. One of the following two prompts will appear:

```
Set Day/Night        Set Day/Night
Mode is: Day         Mode is: Night
```

Use the scroll keys to select the required option and press accept.

4.2 Output Log

This function allows information stored in the controller's datalogger to be output to a standard Quantec RS232 printer. To execute, enter access level three and accept the 'Output Log' prompt . When printing is complete, the controller will return to the previous menu. Please note, this function will only work if the controller's datalogger has been programmed to print manually (see 2.6) and a printer is properly connected to its RS232 printing port.

4.3 Set Date

This function allows the date to be programmed into the controller. It is particularly important that the correct date is entered if Quantec's datalogging facility is to be used. To execute, enter access level three and accept the 'Set Date' prompt.   Use the scroll and accept keys to select the correct day, month and year. Pressing accept after the year has been entered will return you to the previous menu.

4.4 Set Time

This function allows the time to be programmed into the controller and is particularly important if Quantec's datalogging facility is to be used. To execute, enter access level three and accept the 'Set Time' prompt.   Use the scroll and accept keys to select the correct hour and minute. When the minute data has been accepted you will be returned to the previous menu.

4.5 Network Reset

This facility allows the Network voltage to be reduced to zero in order to reset all network devices. The Network is powered down for approximately 5 seconds. To execute, enter access level three and accept the 'Network Reset' prompt.

Appendix 1

Index of location descriptions

40 pre-set names are provided as standard and are listed below. (An additional 45 custom names of 11 characters each can be programmed at Access Level Three).

Annexe	Exit	Quiet Room
Area	FireExit	Reception
Bathroom	Flat	Room
Bedroom	Floor	Shower
Conservtry	Gents WC	Sluice
Corridor	Hairdresser	Special
Dining Room	Kitchen	Staff Room
Disable WC	Ladies WC	Toilet
Display	Laundry	Treat Room
Door	Lift	TV Room
DoorBell	Lounge	Ward
Drugs Cab.	Meeting Rm	Zone
Entrance	OD Light	
ESMIUnit	Phone	

Set ranges

Device Set Range : 2-255

Area Set Range : A-Z (26 areas of call points, default = A)

Group Set Range 1-32 (32 groups of displays, group 1 default to Area A; group 2 default to Area B etc).

Zone Set Range: 1-64 (64 zones of addressable overdoor lights / sounders, no defaults)

Equations

Group Routing Table = 3 (primary, night and divert).

Zone Routing Table = 2 (areas and devices)

Max. N° of terms in each equation 8 (eight)

Network specification

Voltage: 24v (Nominal)

Max.Current: 1.5Amp

Cable type : Refer to Quantec General Purpose Wiring Instructions (approved document no. DNUQ171717)

Max. length: 400metres (Depends on devices and distribution)

Time outs

Time before divert : Adjustable in steps 1, 2, 3, 4, 5, 6, 7, 8 minutes (Default 1 Minute)

Accept Time Out Period : Adjustable in steps 1, 2, 3, 4, 5, 6, 7, 8 minutes (Default 1 Minute)

Communication to the output device

Type: Serial - RS232
Data Rate: 9600 Baud
Protocol: 8 Data Bits, 1 Stop Bit, No Parity

Display Parameters

State	Display Beeper Rate (Sec)	Volume	BackLight
Normal	Off	n/a	Off
Unassigned/Fault	0.5 On, 7.5 Off	Soft	Steady
Presence	Off	n/a	Steady
Standard Call	0.5 On, 7.5 Off	Soft	Steady
Help Req. Call	2.0 On, 2.0 Off	Soft	Steady
Emergency Call	0.5 On, 0.5 Off	Loud	As beep
Attack Call	0.1 On, 0.1 Off	Loud	As beep
Monitor Point	0.5 On, 0.5 Off, 0.5 On, 6.5 Off	Soft	Steady

* When there are concurrent Normal calls from Call Points and Monitor Points the Monitor Point Call Rate is used.

Call Point Parameters

State	Rate	Lamp State
Normal	Off	-
Unassigned	0.5 On, 0.5 Off	Red / Green alternating
Presence	2.0 On, 2.0 Off	Green
Call	2.0 On, 2.0 Off	Red
Assist	0.5 On, 0.5 Off	Red
Emergency	0.5 On, 0.5 Off	Red / Green alternating
Attack	0.1 On, 0.1 Off	Red / Green alternating

Addressable Overdoor Light Parameters

State	Beeper Rate/Volume	Lamp State
Normal	As Display	As Call Point
Unassigned	As Display	As Call Point
Presence	As Display	As Call Point
Call	As Display	As Call Point
Assist	As Display	As Call Point
Emergency	As Display	As Call Point
Attack	As Display	As Call Point

The periods above are subject to a tolerance of 10%.

Appendix 2

The Datalogging Function

Log Record Format

The first line states the time that the log output was started. After that the records are extracted from the log, oldest first, and are downloaded to the output device in the following form: (a) date; (b) hour / minute; (c) location description; and (d) type/level of call (displayed in easy to read columns).

Example of records as printed:

Log output on 1.10.02 at 11.05am

30/09	4:36pm	Dining Room	1 2 3 4			Call	
30/09	4:39pm	Ward	W A 2 3			Call	
30/09	4:40pm	Dining Room	1 2 3 4		Presence		
30/09	4:40pm	Toilet	G F 1 4			Call	
30/09	4:41pm	Dining Room	1 2 3 4	Reset			
30/09	4:42pm	Ward	W A 2 3			Call	
30/09	4:42pm	Toilet	G F 1 4		Presence		
30/09	4:43pm	Ward	W A 2 3				Assist
30/09	4:44pm	Toilet	G F 1 4	Reset			
30/09	4:45pm	Ward	W A 2 3		Presence		
30/09	4:46pm	Ward	W A 2 3	Reset			
1/10	9:02am	Lounge	2				Attack
1/10	9:02am	Lounge	2	Reset			
1/10	10:15am	Bedroom	G F 4			Call	
1/10	10:15am	Bedroom	G F 4				Emergency
1/10	10:18am	Bedroom	G F 4		Presence		
1/10	10:18am	Bedroom	G F 4	Reset			

Fault messages are presented as follows:

16/06	11:13pm	Log full!		
2/10	1.02pm	Display	1 F 2	Device 14 Faulty
23/04	3:30am	Mains supply failure!		
23/04	6:23am	Mains supply restored		

When the Output Log function is selected the contents of the datalogger are transmitted to the output device. When each record has been sent it is deleted from the datalogger and its place taken by a new event.   When all the records have been deleted the datalogger is empty and the output session is completed.

Failure to output the log: If the printer is not able to accept the data, or Automatic Output is disabled and there has been no Manual start command, the datalogger's memory will fill to capacity. When this occurs a warning message will appear on the controller and a record of the warning message will be entered onto the log in the last empty record. New events after this time are lost. This function continues until the log is output normally.

Appendix 3

Anti-Static Handling Guidelines

Before handling PCBs or any other static-sensitive components, please ensure that the following electro-static handling precautions are taken.

Operators should rid themselves of any personal electro-static charge by momentarily touching any of the earth studs in the controller's metal back box with all circuit boards and connections correctly in place. This should be done immediately prior to handling the sensitive components. If not in the vicinity of the back box, any other sound connection to safety earth may be touched. Static sensitive items may now be handled with care. Important: DO NOT touch the legs of any component and always handle PCBs by their sides.

PCBs should be stored in a clean, dry place which is free from vibration, dust and excessive heat.

Retaining the PCBs in a suitable cardboard box will also guard them against mechanical damage.

Appendix 4

Auxiliary outputs

Seven auxiliary outputs are provided, as listed below:-

+24V	+24V (protected by 100mA resettable fuse).
OP1	Activated when any standard call is active on the system. Max current = 25mA.
OP2	Activated when any help required call is active on the system. Max current = 25mA.
OP3	Activated when any emergency call is active on the system. Max current = 25mA.
OP4	Activated when any attack call is active on the system. Max current = 25mA.
OP5	Unused.
0V	0V.

The outputs can be used for driving peripheral equipment, as per the following examples:-

Example 1 : activating a relay when an attack call is present on the system.

Polarised relays with back emf diodes must be used.

connection to other equipment, e.g/ tone pager, strobe, etc

Use a relay such as C-TEC's BF376 relay on a plate

+24V 1 2 3 4 5 0V
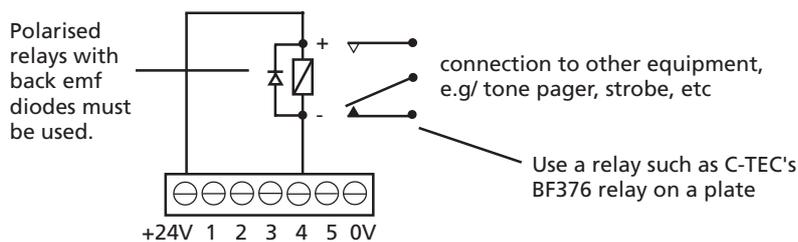
Example 2 : activating a relay when an attack or emergency call is present on the system.

Polarised relays with back emf diodes must be used.

connection to other equipment, e.g. tone pager, strobe, etc

Use a relay such as C-TEC's BF376 relay on a plate

Outputs can be connected in parallel to give common output

+24V 1 2 3 4 5 0V

Quantec DEVICE ASSIGNMENT TABLE

DEVICE		Call Point AREA	Display GROUP	Addressable Overdoor Light ZONE	PLACE DESCRIPTION	
Number	Type				Name	Number

Quantec DEVICE ASSIGNMENT TABLE

DEVICE		Call Point AREA	Display GROUP	Addressable Overdoor Light ZONE	PLACE DESCRIPTION	
Number	Type				Name	Number

Quantec DEVICE ASSIGNMENT TABLE

DEVICE Number	DEVICE Type	Call Point AREA	Display GROUP	Addressable Overdoor Light ZONE	PLACE DESCRIPTION Name	PLACE DESCRIPTION Number

Quantec GROUP ROUTING TABLE *(max. 8 areas/groups per set equation)*

GROUP	PRIMARY AREAS	NIGHT AREAS (BEEP)	DIVERT TO GROUPS

Quantec ZONAL ROUTING TABLE *(max. 8 areas/devices per equation)*

ZONE	AREA EQUATION	DEVICE EQUATION

Quantec NETWORK SPLITTER CONNECTION RECORD

NETWORK SPLITTER No:	Limb	Device ID Numbers	Length
	1		
	2		
Location	3		
	4		
	5		
	6		

NETWORK SPLITTER No:	Limb	Device ID Numbers	Length
	1		
	2		
Location	3		
	4		
	5		
	6		

NETWORK SPLITTER No:	Limb	Device ID Numbers	Length
	1		
	2		
Location	3		
	4		
	5		
	6		

NETWORK SPLITTER No:	Limb	Device ID Numbers	Length
	1		
	2		
Location	3		
	4		
	5		
	6		

NETWORK SPLITTER No:	Limb	Device ID Numbers	Length
	1		
	2		
Location	3		
	4		
	5		
	6		

NETWORK SPLITTER No:	Limb	Device ID Numbers	Length
	1		
	2		
Location	3		
	4		
	5		
	6		

NETWORK SPLITTER No:	Limb	Device ID Numbers	Length
	1		
	2		
Location	3		
	4		
	5		
	6		

NETWORK SPLITTER No:	Limb	Device ID Numbers	Length
	1		
	2		
Location	3		
	4		
	5		
	6		