

A GUIDE TO

Quantec

Addressable Nursecall

WHAT IS QUANTEC?

Costing over half a million pounds to develop, Quantec represents the biggest breakthrough in call communication equipment for many years. System operation can be tailored to suit a care facility's specific requirements with different day, night and call divert arrangements easily accommodated and, if required, simply changed at a later date. This flexibility, coupled with many other advanced features such as four different call levels (Including an infra-red staff attack facility), built-in datalogging and full monitoring of all network devices, makes Quantec the obvious choice for nursing homes and hospitals alike.

WHY HAVE AN ADDRESSABLE CALL SYSTEM?

As nursing homes have become larger and more specialised, demand has increased for call systems which operate in more sophisticated ways, i.e. different urgencies of calls, calls shown in different places at different times, sounders operating as quietly as possible, etc. These requirements can vary greatly between establishments and although it is possible to meet some of these demands with the careful planning of conventional call systems, conditions change and there is often some special request which cannot be easily accommodated once installation is complete.

QUANTEC v BASIC ADDRESSABLE CALL SYSTEMS

The main advantage of addressable call systems over conventional call systems is that they can be installed with very little planning and displays can be fitted virtually anywhere to suit the application. However, whilst simplifying things for the installer, most addressable systems fail to satisfy the varied needs of the user. This is because they are essentially 'dumb' systems, i.e. their call points send notification of a call onto the wiring, their displays pick the information up and the message is shown everywhere.

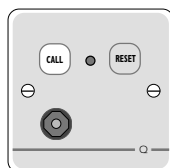
Quantec is different. It is much more sophisticated than basic addressable call systems, but at the same time it is very simple for staff to use. Quantec's call points send notification of a call to the 'Network Controller' which passes the call only to pre-selected displays, which can be quickly and easily altered in the future.

In order to achieve this level of flexibility and allow the use of ordinary unscreened cable, Quantec utilises a unique data protocol which works down just two wires (power and data). This allows considerable cost savings on installation and means Quantec can be retrofitted to the wiring of many existing conventional call systems. The protocol allows up to 256 addressable devices (network controller, displays, call points, etc) to be connected to a system together with virtually any number of ancillary devices such as ceiling pulls and overdoor lights.

SYSTEM OPERATION

PATIENT CALLS

To trigger a call, the patient presses the 'CALL' button on a wall-mounted call point, pulls the cord of a ceiling pull unit or operates the remote button of a tail call lead. This causes the call point's confidence light to pulse red slowly. Outside the room, sounders pulse slowly, overdoor lights (if fitted) pulse red slowly and all relevant displays show the exact location of the calling room.



CALL ACCEPT

When a call is shown on several displays, several staff may respond simultaneously. To help prevent this happening, one member of staff can accept the call by pressing the 'A' button and remove it from all displays (for safety reasons the call will return if it is not dealt with quickly).



STAFF PRESENCE

When the attendant arrives, the call point's 'RESET' button is pressed to cancel the call and to put the call point into Staff Presence mode. This causes the call point's confidence light to pulse green slowly. Outside the room overdoor lights (if fitted) pulse green slowly and all relevant displays show the location of the room where staff are present.

CALL FOLLOWER SOUNDERS (optional)

If fitted, low level sounders will sound at all call points in Staff Presence mode when the system is in NIGHT mode and a call occurs elsewhere. This helps reduce sound levels by quietly informing staff that other calls are waiting, prompting them to visit a display.

RESET

As the attendant leaves the room the call point's 'RESET' button is pressed again to take it out of Staff Presence mode. If preferred, magnetic reset call points can be used with magnetic reset keys (see NETWORK DEVICES section for further details).

HELP REQUIRED CALLS

If assistance is required (but it is not an emergency), pressing the call point's 'CALL' button whilst it is in Patient Call or Staff Presence mode makes a Help Required call. This causes the call point's confidence light to pulse red more urgently than when a Patient call is made. Outside the room, sounders pulse more urgently, overdoor lights (if fitted) pulse red and a Help Required message appears on all relevant displays together with the location of the room where assistance is required.

Please note: repeated operation of a tail call button or ceiling pull will not initiate a Help Required call.

EMERGENCY CALLS

In an emergency, pressing the call point's 'CALL' and 'RESET' buttons together makes an Emergency call regardless of the previous state of the call point. This causes the call point's confidence light to flash red and green. Outside the room, sounders pulse rapidly, overdoor lights (if fitted) flash red and green and an emergency message appears on all relevant displays together with the location of the calling room.

INFRA-RED STAFF ATTACK CALLS (optional)

To help combat the threat of verbal and physical abuse against carers, Quantec includes an optional infra-red staff attack facility which helps protect staff against disturbed patients, intruders and/or aggressive visitors. It works as follows:

- (1) Designated staff carry an infra-red transmitter which they attach to their belts. When an attack takes place, they press the button on the transmitter or pull it from its belt clip to fill the area with infra-red signals.
- (2) These signals are received by a special infra-red call point or ceiling receiver which instantly informs Quantec that an attack is taking place.
- (3) An urgent, piercing alarm is sounded throughout the building and the exact location of the attack is indicated at every display, thus prompting the quick response of security staff.

For security reasons Attack calls can only be reset by entering a special code at the Network Controller or a Display with controls.

Please note: In addition to Attack calls, Quantec's infra-red call points and ceiling receivers can generate other levels of call. The level of call generated depends on the type of transmitter and receiver used (a list of available transmitters appears on page 4).

NIGHT MODE

Night mode can be selected at the network controller. When selected, all calls are shown on all displays but only selected displays sound. This allows for lower staffing levels and reduced sound levels. Night mode can be backed up by the use of optional CALL FOLLOWER SOUNDERS in call points (see page 1).

AUTOMATIC DIVER T

If a call remains unanswered for a preset time (1-8 mins), to ensure it does not remain unattended indefinitely, the system can be set up to automatically divert it to other areas.

MANUAL DIVER T

If a member of staff leaves one area they can divert calls to another area via the controls on a display.

DATALOGGING

Quantec's built-in datalogger can record the date, time, type and location of every call and reset for output to an 80 column serial printer. Quantec Printer Kits (part no. QT600P) are available. Each kit includes a printer, interface lead and connection socket. All kits are tested with Quantec prior to despatch.

PAGING (optional)

Due to problems of misuse (paggers being dropped in the sluice or being put through the washing machine, etc), where possible we recommend the use of CALL FOLLOWER SOUNDERS and a larger number of displays as a reliable, practical and economical alternative to paging. However, when paging must be used, the following options are available, both of which require the purchase of additional equipment:

Tone Only Paging: a very basic paging facility designed to indicate that a call has been raised on the Quantec system. No priority is given to the level of incoming call, i.e. if a Patient call is flagged before an Emergency call, the pager will not show the Emergency call until the Patient call clears. Patient calls beep once and the number 1 is shown, Help Required calls beep twice and the number 2 is shown, Emergency and Attack calls beep three times and the number 3 is shown. To determine the exact location of a call, staff must visit a display.

Alphanumeric Radio Paging: this option allows call information from the Network Controller to be broadcast globally to hand

held alphanumeric paggers via a radio transmitter. It is possible to select which type of call(s) are transmitted to the paggers (i.e. Emergency calls only). It should be noted however that different levels of calls cannot be prioritised. For example, if a Patient call is triggered followed by an Emergency call, the Emergency call will not be displayed until the Patient call has been accepted. (This is not the case at displays where different types of calls are still prioritised depending on their urgency). It is not possible to have a Quantec Printer and a Radio Transmitter connected to Quantec at the same time.

For further information on the above options, a Quantec Paging datasheet is available (document no. DNU8740001).

NETWORK DEVICES

Network devices are small, discreet and blend perfectly into any sort of decor. Up to 256 network devices can be used per system, each containing a non-volatile memory to store its unique address identification number. Network devices consist of Call Points, Displays, Monitoring Points, Ceiling Receivers and Addressable Overdoor Lights. They do not include ancillary devices such as Slave Overdoor Lights or Ceiling Pulls.

CALL POINTS

Quantec's call points have two buttons, a red/green confidence light and (depending on the version purchased) a remote socket for connecting ancillary devices such as tail call leads and pressure pads. The type of call point used will depend upon the type of operation (button or magnetic reset) and the system features you wish to take advantage of. For example, if you wish to utilise Quantec's Call Follower Sounder option, call points with sounders should be used. Likewise, if you want to make calls with Infra-Red Transmitters, call points with infra-red receivers should be used. (infra-red coverage may not be required in all rooms and infra-red ceiling receivers are also available).



QT602 RANGE CALL POINTS (include remote sockets)

- QT602 Quantec call point, button reset
- QT602S Quantec call point, button reset with sounder
- QT602R Quantec call point, button reset with I/R receiver
- QT602RS Quantec call point, button reset with sounder & I/R receiver
- QT602M Quantec call point, magnetic reset
- QT602SM Quantec call point, magnetic reset with sounder
- QT602RM Quantec call point, magnetic reset with I/R receiver
- QT602RSM Quantec call point, magnetic reset with sounder & I/R receiver

QT609 RANGE CALL POINTS (do not include remote sockets)

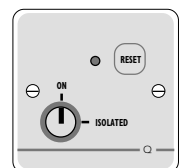
- QT609 Quantec call point, button reset
- QT609S Quantec call point, button reset with sounder
- QT609R Quantec call point, button reset with I/R receiver
- QT609RS Quantec call point, button reset with sounder & I/R receiver
- QT609M Quantec call point, magnetic reset
- QT609SM Quantec call point, magnetic reset with sounder
- QT609RM Quantec call point, magnetic reset with I/R receiver
- QT609RSM Quantec call point, magnetic reset with sounder & I/R receiver

MAGNETIC RESET KEYS

- NC803M/10 Pack of 10 magnetic reset keys
- NC803M/50 Pack of 50 magnetic reset keys

MONITORING POINTS

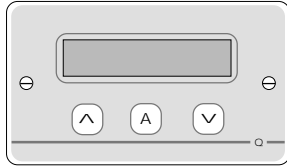
Monitoring points have one button, a red / green confidence light and an isolation keyswitch to prevent operation when a door is to be left open. If required, fire exits, doorbells, telephones, drug cupboards, drips, infra-red detectors etc, can be connected so that operating them makes a Patient call or an Emergency call. Door contacts are not supplied.



- QT604 Quantec Monitoring Point, button reset
- QT604M Quantec Monitoring Point, magnetic reset

DISPLAYS

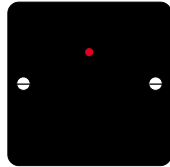
Quantec's displays scroll automatically and only show the calls which are the most urgent plus a message saying how many calls are waiting on that part of the system. Therefore, if there are no calls, the displays will show the time, then Staff Presence calls, Patient calls, Help Required calls, Emergency calls and Attack calls. They have an accept button, plus buttons to control the divert and other features. Displays with no controls are also available.



- QT608C** Quantec Corridor Display, with controls
- QT608CD** Quantec Corridor Display, no controls

INFRA-RED CEILING RECEIVERS

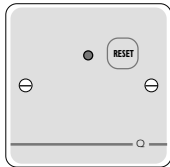
Infra-red ceiling receivers are designed for use with Quantec's wide range of infra-red transmitters (see page 4). They are usually located in bedrooms, corridors, common rooms and any other area requiring infra-red coverage. Slave ceiling receivers are also available (up to three per master ceiling receiver or infra-red call point) to improve coverage in 'L' shaped rooms, etc. External and test receivers are also available.



- QT302RX** Master Infra-Red Ceiling Receiver
- QT302RXS** Slave Infra-Red Ceiling Receiver
- QT302RXE** Master External Infra-Red Ceiling Receiver
- QT302RXES** Slave External Infra-Red Ceiling Receiver
- QT302RT** Test Infra-red Ceiling Receiver

PRESENCE POINTS

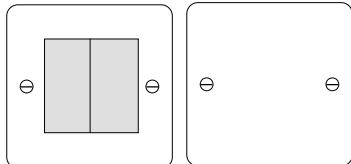
Quantec's Presence Points have one button and a red / green confidence light. Pressing the button once puts the device into Staff Presence mode, allowing staff to inform their colleagues where they are working. Pressing the button again cancels the Presence call.



- QT609PB** Quantec Presence Point, button reset
- QT609PM** Quantec Presence Point, magnetic reset

ADDRESSABLE OVERDOOR LIGHTS / ADDRESSABLE SOUNDERS

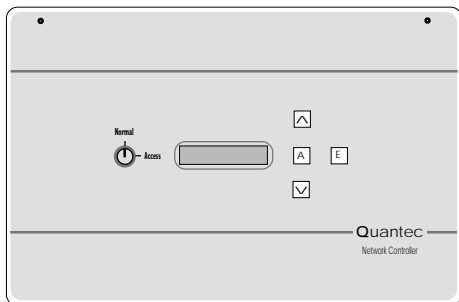
Addressable overdoor lights are designed to act as area indicators or to provide 'follow me' lights at the ends of corridors, etc. They have built-in sounders and are similar in appearance to standard overdoor lights. Because they are addressable, they can be instructed to light when certain groups of call points are calling. Addressable sounders can be used to increase sound levels in long corridors, etc.



- QT606A** Quantec Addressable Overdoor Light
- QT688** Quantec Addressable Sounder

NETWORK CONTROLLER

The Network Controller supplies power to and controls the Quantec system. An RS232 printer port is fitted internally to allow the printing of system setup data and information from the controller's built-in 500 event datalogger. All programming is carried out at the Network Controller using the front panel buttons under keyswitch control.



The Network Controller constantly monitors all devices on the network and indicates the exact ID number of any faulty device, helping to simplify fault-finding. The following names and any four alphanumeric characters can be given to devices via a menu in the Network Controller:

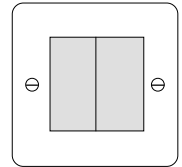
Annex	Doorbell	Kitchen	Room
Area	Drugs Cab	Ladies WC	Shower
Bathroom	Entrance	Laundry	Sluice
Bedroom	ESMI Unit	Lift	Special
Conservatory	Exit	Lounge	Staff Room
Corridor	Fire exit	Meeting RM	Toilet
Dining room	Flat	OD Light	Treat Room
Disabled WC	Floor	Phone	TV Room
Display	Gents WC	Quiet Room	Ward
Door	Hairdresser	Reception	Zone

- QT601** Quantec Network Controller
- FB385** Flush Bezel for Quantec Network Controller

ANCILLARY DEVICES

OVERDOOR LIGHTS

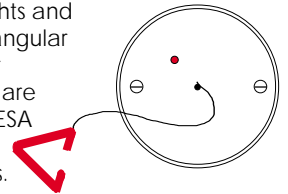
Overdoor lights comprise two red and two green long life ultra-bright LED's inside a triangular diffuser. They offer low current consumption and connect to call points via four cores (Two cores are the same as the two network wires so connection to the network can be made at the overdoor light or the call point).



- QT606** Quantec Overdoor Light

CEILING PULLS

Ceiling pulls have twin confidence lights and a six foot cord with an open-sided triangular pull for ease of use by the infirm. Four knockouts are provided for 16mm square mini trunking and the backplate fits BESA centres. They are reset at a call point and are connected to it via three cores.



- QT607** Quantec Ceiling Pull

SLAVE CALL POINTS

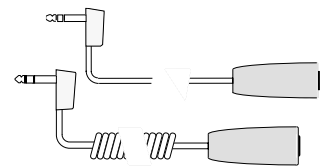
Slave call points are functionally the same as ceiling pulls and as such must be used in conjunction with a master call point. Comprising a call button, remote socket and confidence light, they are designed for use in areas such as double bedrooms where more than one call button may be required. All calls must be reset at the master.



- NC602D** Quantec Slave Call Point

TAIL CALL BUTTONS

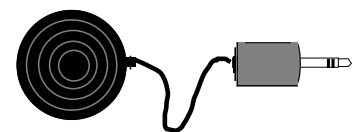
Tail call buttons consist of a pear push, a lead and a right angled plug to connect it to a call point. A call is made by pressing the button or by pulling the plug out. Tail call leads are available in a variety of different lengths to suit different applications.



- NC805C/6** 6ft tail call button with right angle plug
- NC805C/14** 14ft tail call button with right angle plug
- NC805D** 4-12 foot tail call button with coiled lead

HAND/FOOT OPERATED PNEUMATIC TIC PADS

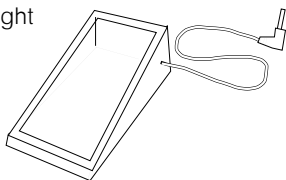
Ideal for patients who find it difficult to press buttons, Quantec's hand/foot operated pneumatic pad is used in conjunction with the highly sensitive NC805AS air switch. Applying pressure to the pad operates the air switch which, when connected to a call point's remote socket, triggers a call.



- NC805P** Hand/Foot Operated Pneumatic Pad
- NC805AS** Remote Air Switch, for use with NC805P

POR TABLE MOVEMENT DETECTORS

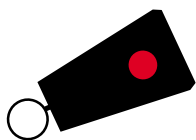
A simple to operate adjustable weight sensor which sits under the leg of a bed and connects to a call point's remote socket via a jack plug. A call is triggered when the bed is vacated, thus alerting staff to the prospect of a wandering patient.



NC805MD Portable Movement Detector

INFRA-RED TRANSMITTERS

Quantec's Infra-Red Transmitters have a minimum transmitting range of 10m (line of sight). In addition to making attack calls, variants are available that will make other types of calls, as highlighted below. All variants provide battery low indication as standard.



- QT312RXA Infra-red transmitter (push for attack/pull for attack)**
- QT312RXHA Infra-red transmitter (push for help required/pull for attack)**
- QT312RXC Infra-red transmitter (push for call / no pull)**
- QT312BM Battery module for Infra-red transmitters**

DEVICE DIMENSIONS

	WIDTH	HEIGHT	DEPTH
Call Points / Monitoring Points	87	87	35
Ceiling Receivers	87	87	35
Displays, Network Splitters	146	87	35
Network Controller	405	267	92
Overdoor Light	87	87	60
Area Indicator	87	87	80
Ceiling Pull	93ø	-	27
Infra-Red Transmitters (main body)	48	98	22
Portable Movement Detector	100	48	187
Pressure Pad	93ø	-	22

Call points and overdoor lights fit on 25 mm deep single gang back boxes. Displays mount on 35 mm deep back boxes. Ceiling pulls mount on BESA centres.

PLANNING AN INSTALLATION

Although Quantec far exceeds the minimum requirements of all agencies, rules regarding installation vary depending on the location of the installation. If there is any doubt, please check with the relevant authorities.

The **Network Controller** can be located anywhere on the network although it is usually installed centrally to reduce wiring runs or in the manager or matron's office. When not being used for programming, it operates in exactly the same way as a display.

Displays should be located strategically around the premises where they can be readily seen by staff, in areas such as nursing stations, junctions in corridors, staff rooms etc.

Call Points should be sited next to each bed, preferably above bedhead height to avoid damage to them when the bed is moved. They should also be installed in lounges, dining rooms, etc.

Ceiling Pulls should be fitted in each bathroom and WC.

Slave Over door Lights (if required) are normally installed outside rooms.

If area indication or 'follow me' lights are required, **Addressable Over door Lights** should be positioned at the ends of corridors, above fire doors etc.

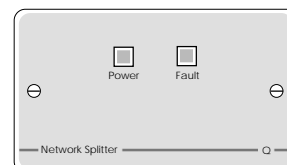
Monitoring Points should be fitted close to fire exits, drug cupboards or alongside any other area/device which needs to be monitored.

Infra-red Ceiling Receivers / Call Points should be positioned in all areas which require infra-red coverage. The number and type of devices used will vary depending on the application.

PLANNING THE WIRING

Quantec operates at 24V d.c. and can be compared to a very sophisticated analogue addressable fire alarm system where the wiring of the system is of paramount importance. However, with Quantec, a 'star' rather than a 'loop' wiring scheme is used.

In order to allow the use of ordinary unscreened cables and reduce the risk of voltage drop, the **ONLY** recommended method of wiring Quantec involves the use of 'Network Splitters' (QT603)

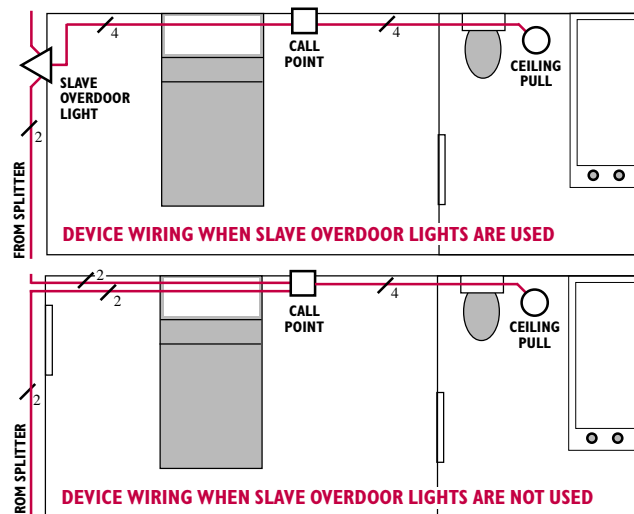


These devices have six fused 'limbs' for the wiring of individual sections of the system and they provide a convenient way of wiring, testing and protecting the system. In addition to simplifying the wiring and reducing voltage drop, the Network Splitter's fault and power LEDs also help find installation 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 should normally be wired in at least 1mm² cable (e.g. T&E). No other networked devices should be connected to the spine except Network Splitters. The fused outputs i.e. 'Limbs' are for the connection of individual circuits containing networked devices. These should be wired in four or six core security cable.

In excess of 60 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 likely that more will be used.

As network devices are 'soft addressed' after installation no consideration need be made as to how different network devices will interact with each other. Within rooms, however, ancillary devices must be connected to a call point and it is simplest to loop in and out of slave overdoor lights (if fitted). If slave overdoor lights are not fitted, loop in and out of call points. See diagrams below.



Quantec does not suffer from capacitance problems and there is no requirement for extra booster PSUs. Comprehensive details on how to wire Quantec appear in our Quantec Wiring Instructions (document no. DNUQ171717). Please ensure your contractor obtains a copy of this document and reads it carefully before work commences. Pre-Commissioning Instructions are also available (document no. DNUQ1818PRE).



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