



PAGETEK PRO

Fire & Security Paging System



Installation Manual

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PAGETEK PRO

PREFACE

Important Installation Information

It is the purchasers' responsibility to determine the suitability of this equipment and its derivatives for any given application. To assist in this, a System Design certificate is provided at the back of this manual (see Annex A), which declares the system's intended purpose, its compliance with specific standards, and lists any applicable variations.

This system must only be installed after a thorough site survey has been performed, and only after the site survey report has been signed off to the satisfaction of both installer and purchaser.

Good working practice dictates that a suitable system installation log must be generated, together with a record of the dates when the system has been manually checked, (with the aid of signal strength meters etc.) enabling the system performance to be compared with the original installation data. The relevant data should be entered in the Log by the installer both at time of installation and following any subsequent site visits.

The supply of this equipment is governed by our standard terms and conditions of sale, which can be found on the reverse of all order acknowledgements*, pro forma invoices*, delivery notes, price lists and invoices. Alternatively, these can be provided on request.

* Faxed pro forma invoices and quotations refer to "conditions available upon request".

Important Safety Information

Scope products are designed to operate safely when installed and used according to general safety practices. The following requirements should be observed at all times.

Do NOT subject this equipment to:

- Severe Mechanical shock
- Excessive humidity or moisture
- Extremes of temperature
- Corrosive liquids

This equipment is designed for indoor use, unless expressly stated otherwise, and must not be used in classified Hazardous Areas, including areas containing explosive or flammable vapours, unless express authorisation has been given in writing by the manufacturer. If in doubt, consult your local product dealer for further information.

Only use a damp cloth for cleaning (not liquid or aerosol based cleaners), and ensure that any power is removed from the unit prior to beginning the cleaning operation.

Opening of access doors and removal of covers from the equipment must only be undertaken by authorised service personnel, who should ensure that power is isolated prior to commencing any maintenance work.

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Preface

Installation

Installation must only be undertaken by an Approved contractor, who shall ensure that all work is carried out in compliance with National Wiring Regulations and the relevant parts of BS 5839-1: 2002. In all cases, installation may only take place after a full site survey has been performed to the satisfaction of all parties. The installer shall issue Installation, Commissioning and Acceptance certificates to the purchaser, for completion by the Installer and (where applicable) the purchaser.

Liability

Scope does not accept liability for any damage or injury, howsoever caused as the result of misuse of this equipment. It is the responsibility of the user to ensure that the equipment is operated in the manner for which it was intended and that it is the correct item of equipment for the required task.

Warranty

This product is warranted as free from defects of workmanship and materials for a period of one year from the original purchase date. During this time, if there is a defect or malfunction of this product, Scope will, with proof of purchase, repair or replace at its discretion any defective parts, free of charge. This does not include where the adjustments, parts and repair are necessary due to circumstances beyond the control of Scope, including but not limited to fire or other casualty, accident, neglect, abuse, abnormal use or battery leakage damage.

WARNING ! No User Serviceable Parts

Caution! Risk of electric shock, do not open.

Alteration or modification to any part of this equipment, without the prior written consent of the manufacturer, will invalidate all manufacturer approvals and warranties. No adjustments can be undertaken except by qualified and licensed persons as authorised by Scope.

This product complies with the essential requirements of the R&TTE Directive 1999/5/EC
Copies of the Declaration of Conformity covering this product can be obtained from Scope at: Quantum House, Steamer Quay, Totnes TQ9 5AL United Kingdom.

Do not discard. At end of life this equipment must be sent to an authorised waste treatment centre. Contact Scope at the above address for further details.



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PAGETEK PRO

1) Pagetek Pro System Overview

The Pagetek Pro is an industrial paging system intended for use with professional Fire and Security systems installed in commercial/industrial premises. The system is primarily designed to alert the hearing impaired in the event of a fire or other emergency where an audible sounder is the normal means of indication. Typical users include factories, offices, universities, schools, hospitals, hotels and public buildings.

The Pagetek Pro has been designed to comply with the recommendations detailed in BS5839-1: 2002, Section 18 and Annex C, for alerting the hearing impaired to the activation of a fire alarm. The system can also be pre-configured for use with a security alarm panel to alert guards who might be located remote from the main premises.

The interface to the host Fire alarm system comprises of three prioritised, normally closed dry contact inputs, a further input to provide for fault indications from the host Fire panel and a Reset input. There are also 3 further inputs reserved for exclusive use with the Answertek Pro receiver. For ease of installation, a monitored interface cable is provided with the system which also includes a “common fault” relay output back to the host Fire alarm panel. This will activate if the Pagetek Pro suffers a mains failure, transmitter fault, antenna mismatch, link failure, low battery or faulty battery condition. All of these conditions are also clearly indicated on the front panel display of the Pagetek Pro using simple text messages, together with a fault light and an audible sounder. These fault messages can also be transmitted to a pager or group of pagers for added integrity (see Section 8, Fault Status Indicators).

A key operated System Test facility is provided for routine confidence checking. When activated, the display will read “SYSTEM TEST” and this message will also be transmitted to all pagers. If a Fire input is activated during the test, this will over-ride the Test message at all times.

The system is fitted with a wiring harness and mounting kit for a 12V 7Ah sealed lead acid battery. The battery must be purchased separately and correctly installed for the system to function. See Installation diagram 3, page 9, for further details.

Upon activation of any Fire Zone input, the Pagetek Pro system will enter the fire alert condition, prioritising and transmitting the Fire message to all pagers. The transmissions will be repeated until the fire condition is reset. Special format Scope pagers ensure that users are alerted by distinct vibrate patterns and clear text messages.

1.1 UHF radio

Scope uses only UHF radio frequencies, which not only provide superior in-building propagation, but also offer the option of the manual frequency co-ordinated licence issued by OFCOM. This affords the highest degree of protection from interference available for radio paging systems in the UK, as acknowledged in Section 18.1 of BS 5839-1: 2002. Please ask our Sales team for further information and relevant licence forms.

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1.2 Scope high-integrity Pagers

To complete the system, Scope offers both numeric and alphanumeric pagers with added features specially incorporated for the hard of hearing when used with the Pagetek Pro system. This includes distinct vibrate alerts for emergency messages, a vibrating out of range indicator which also displays "No Service" on the pager if the radio link is lost, and a vibrating low battery indicator. Compliant pagers for use with this system are: N8T (numeric with pre-stored text messages), GEO 40A7 (2 line alphanumeric) and GEO 84ZV4 (4/8 line alphanumeric). Please contact our Sales team on 01803 860710 for further details. Brochures for these pagers are also available for download at www.scope-uk.com

1.3 Optional antennas

A range of professional antennas are available to suit all situations. See below in Section 2.2.

1.4 Conformity

CE marked and compliant with the R&TTE Directive 1999/5/EC.
Standards applied: EN 300 224 (On-Site Radio Paging), EN 60950 (Safety), EN 301 489 (EMC) and the additional EMC requirements of BS 5839-1:2002.
Compliant with BS5839-1: 2002, para. 18 and Annex C.

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2) System Kit

2.1 Pagetek Pro Fire Paging System Model: PTPRO

This system includes the following components. Please check they are all present when opening the packing carton.

- i) 1 off main cabinet, housing all interfaces, 2 line backlit text display, transmitter and internal mains power supply; mounting kit and internal cabling for battery backup, external monitored interface cable, spare fuses.
- ii) 2 off IP68 metal cable glands
- iii) wall mounting screw kit and drilling template
- iv) this Installation manual, inc. Design Certificate
- v) User Manual, inc. System Log

2.2 To be ordered separately:

Antenna options

Model

3/4UHF	¾ wave fixed	Will cover most commercial sites.
LUHFDP	Mini Dipole	Remote internally mounted antenna for larger sites (includes bulkhead cable gland).
FUHFDP	Folded Dipole	Remote externally mounted antenna for maximum coverage*.

Note: antennas are supplied with a bulkhead cable gland pre-fitted. *The FUHFDP also requires a feeder cable and mounting bracket (to be ordered separately). Contact our Sales team on 01803 860710 for further details.

Pager options

Model

N8T	Numeric Pager, 1 line, 12 character with pre-stored text messages.
GEO 40A7	Alphanumeric pager, 2 line, 40 character.
GEO 84ZV4	Alphanumeric pager, 4/8 line zoom, 80/160 character.

2.3 Additional requirements

- a) The following items to be provided by the installer:

12V 7Ah sealed lead acid battery

Mains input cable, 13A, 3 core, Fire rated to meet BS 5839-1: 2002

Completed Installation & Acceptance Certificates

- b) The following items to be provided by the purchaser/user:

OFCOM radio paging licence, Form OF21, available on-line at www.ofcom.org.uk

NOTE: the system will not operate without the correctly installed battery and antenna. A fault warning message will appear on the system status display to advise of: "BATTERY FAULT" or "ANTENNA MISMATCH".

Ensure that both these items have been procured before attempting to install this equipment.

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3) Installation

The information contained in this Section is intended for use by authorised system installation engineers only. Installation must only take place after a full site survey has been performed and signed off by both the installer and the purchaser.

3.1 Siting of the unit

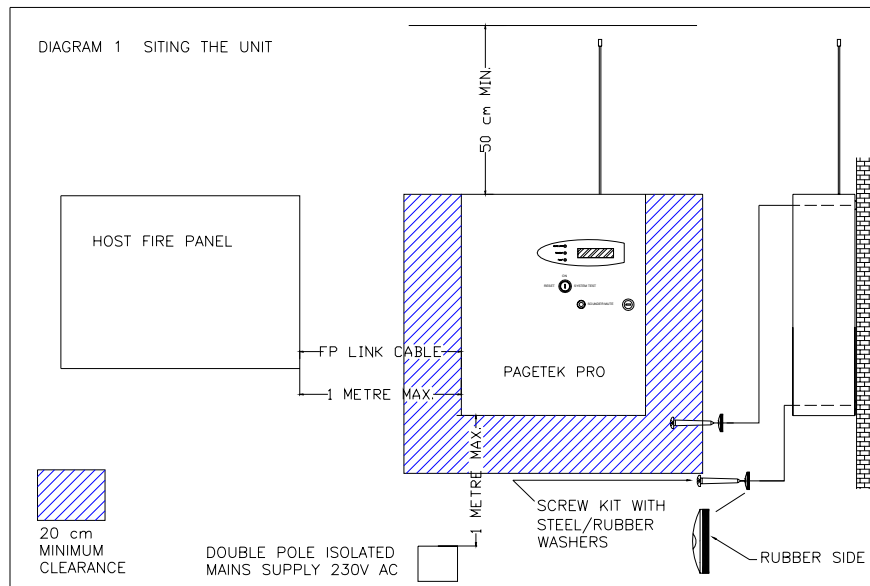
a) The Pagetek Pro cabinet must be permanently fixed to a wall (using the supplied screw kit and washers) within 1 metre of the host Fire Alarm panel and within 1 metre of a double pole isolated mains supply*.

[*in accordance with BS 5839-1: 2002, Section 25.2]

b) Take care to ensure that there is a minimum clearance of 20 cm on all sides, plus additional 50 cm above the unit if fitted with the 3/4UHF antenna. Do not fit the battery and antenna until the cabinet has been fixed to the wall.

c) For ease of installation, a drilling template is provided with the system. DO NOT try to use the cabinet as a template as this will almost certainly damage the precision crystal components associated with the transmitter and will contaminate the electronic circuit boards within the housing.

d) Fix the cabinet to the wall using the screw kit and drilling template provided, ensuring that the steel/rubber washer sets are correctly fitted to each mounting point, as shown in diagram 1.



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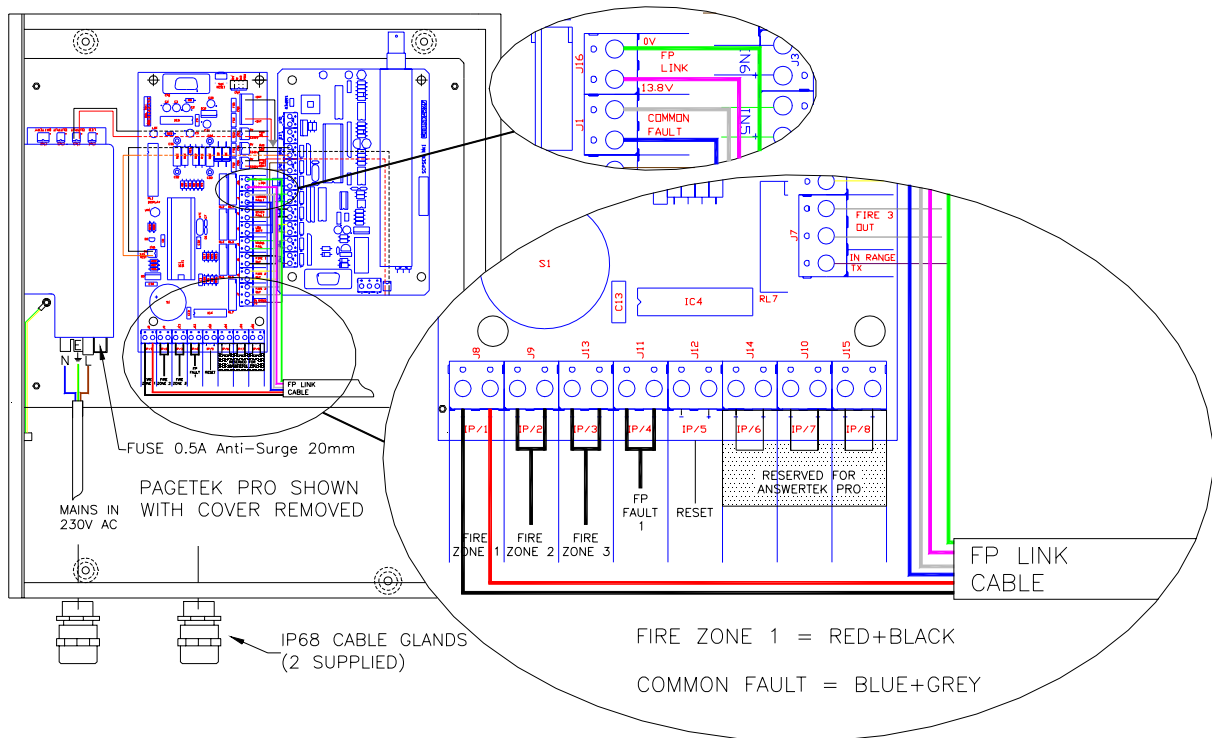
3.2 Fitting the mains and interface cables

- a) Remove two of the knock-outs from the base or side of the cabinet and fit the metal cable glands provided.
- b) Route the fire-rated mains cable through one of the cable glands and secure the Live, Neutral and Earth wires into the screw terminal block provided. There should be minimal slack cable inside the cabinet and care should be taken to ensure that there is at least 10 mm of clearance between the mains and any other cables. Do not coil up slack mains cable inside the cabinet. Tighten the cable gland cover to clamp the cable.
- c) Uncoil the monitored FPLINK cable from inside the cabinet and route through the second cable gland.

Do NOT cut the free end to shorten the cable, as this contains a resistor between the screen (drain wire) and one of the cores (violet) for monitoring purposes.

- d) The wires for one of the Fire Inputs (Fire Zone 1) are already connected to the system, as is the “common fault” output and the monitored link. If additional inputs are required, remove the appropriate shorting link from the input and terminate two of the available wires. Note that all inputs are normally closed, going open to trigger, so unused inputs must have a shorting link fitted. See diagram 2 for terminal and cable pin-out details.

DIAGRAM 2 WIRING PIN OUTS



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e) Connect the two input wires of Fire Zone 1 to an appropriate closed dry contact output on the Fire panel. This must be a normally closed contact which goes open upon activation of the fire condition. Up to 2 additional Fire inputs can be connected (Fire Zone 2 & 3). These will require removal of the applicable shorting link(s) and termination of pairs of spare wires provided.

Note: all inputs to the Pagetek Pro are 0V grounded. Installers should seek technical advice from the relevant Fire Panel manufacturer BEFORE attempting to interface to this equipment. If in doubt, contact our technical sales team for further advice.

f) Connect the “Common Fault” output wires to an appropriate input on the Fire panel. This is a normally open relay contact which closes upon activation of any identified fault condition (see section 8.2 for identified Faults). **Note that this must be connected to the Fire panel for the system to be fully compliant with BS5839-1: 2002.**

g) Additional wires are available for connection of a Fault output (FP Fault 1) from the Fire panel, if required. Again, these must be normally closed dry contacts, going open upon activation of a fire panel fault condition. Remove the appropriate shorting link(s) on the Pagetek Pro interface board and terminate the spare wires provided.

h) A reset input is available to remotely reset the system from the Fire panel if required. The input is Normally Open going closed and is edge triggered. Note that the Reset switch on the front panel of the Pagetek Pro is also connected to this input.

i) There are sufficient wires in the FPLINK cable to connect all the available inputs and outputs. Do NOT use separate wiring as this will not be monitored for its integrity, as required by BS 5839-1:2002.

Note: the mains input block contains a fuseholder fitted with a 0.5A AS 20 mm fuse. Only replace with an identical rated fuse (a spare is supplied).

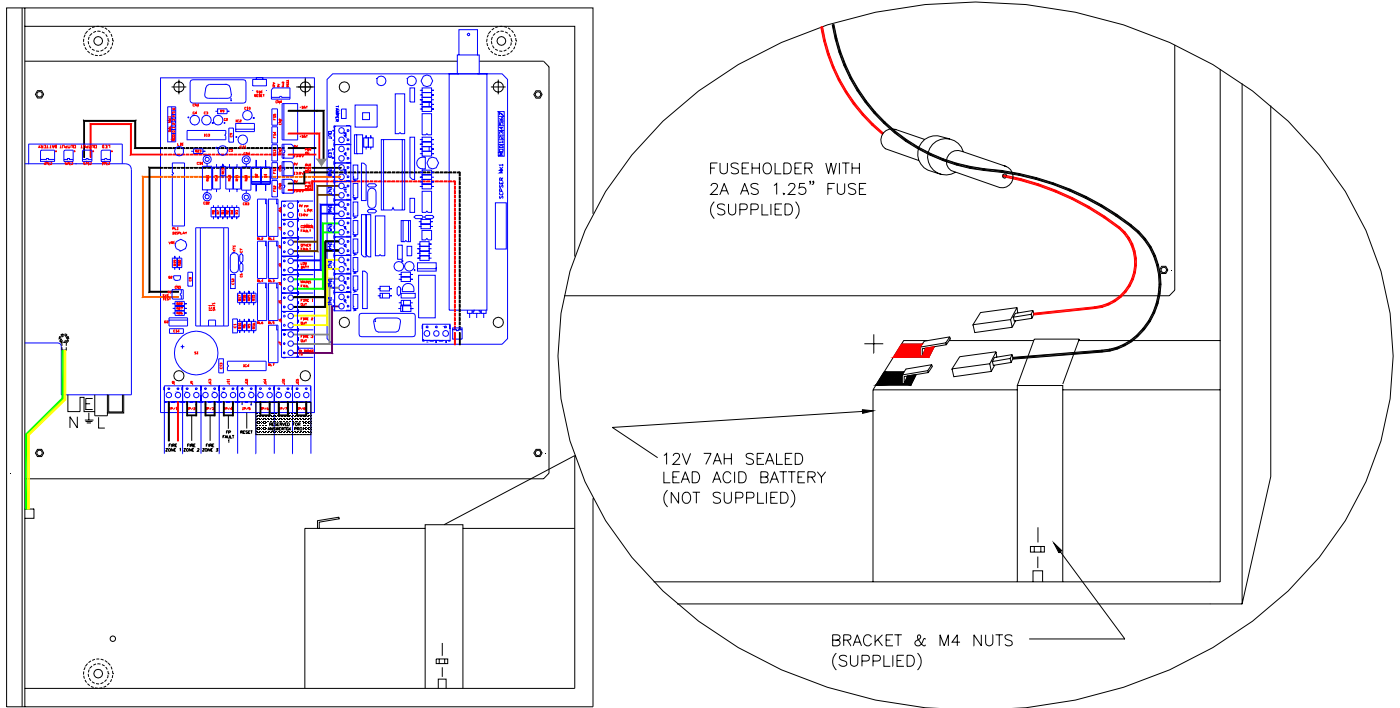
j) Inputs 6, 7 & 8 are reserved for exclusive use with the Answertek Pro monitoring receiver, where they are used to report “RADIO JAMMING”, RX SIGNAL FAULT” and “RX FAULT” respectively. DO NOT remove the shorting links (unless an Answertek Pro is connected).

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3.3 Fitting the battery

- a) The battery type required is a sealed lead acid 12V 7Ah battery.
- b) Slacken the bracket nuts and insert the battery from the left, with the contacts innermost (to the left), as shown in diagram 3.
- c) Fit the red cable connector to the positive terminal. Do NOT fit the black cable connector to the negative terminal at this stage (see Power Up, section 4)
- d) Check that the battery is located as far to the right hand side of the cabinet as possible then re-tighten the bracket nuts.

DIAGRAM 3 FITTING THE BATTERY



e) Note that the fuseholder is fitted with a 2A Anti-Surge type 1.25" fuse. If the fuse ever requires replacing, only fit with an identically rated type (a spare is provided). If in doubt, call Scope's technical help team for advice on 01803 860720.

f) When fitting the spade connectors to the battery terminals always check that they are a tight fit. A loose connection will result in the warning message "BATTERY FAULT" appearing on the system display (see Section 8.2, vii).

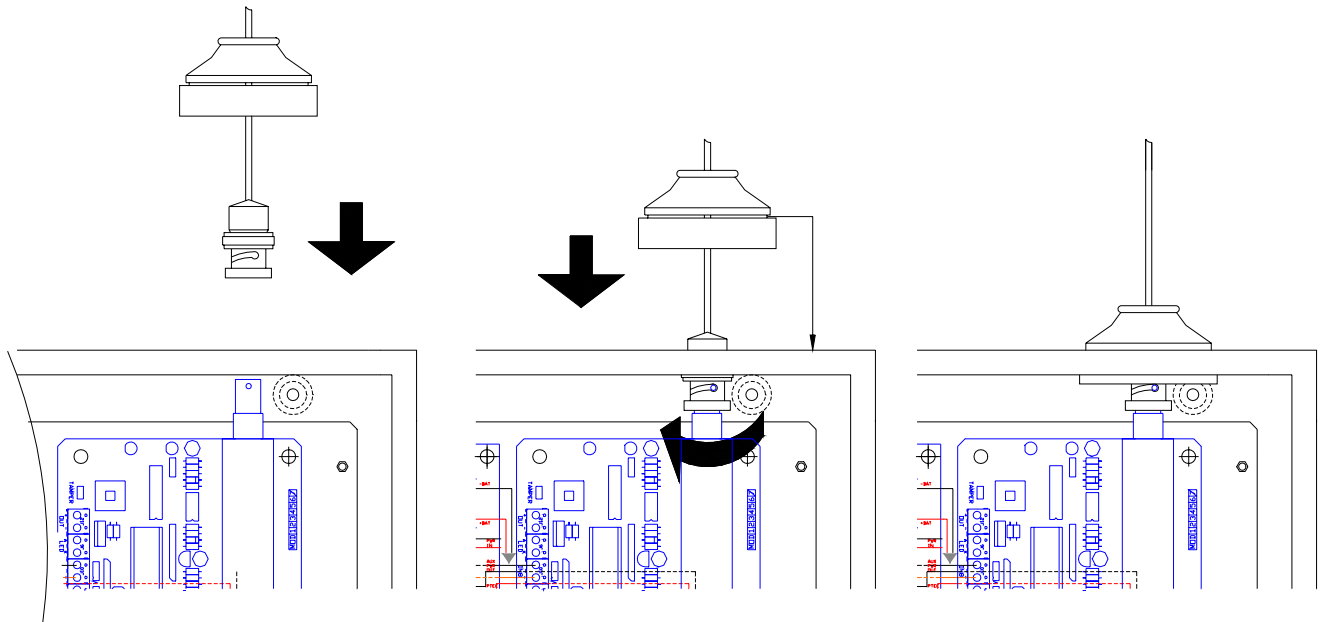
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3.4 Fitting the antenna

a) For the 3/4UHF and LUHF antennas, insert the connector end through the pre-cut hole in the top of the case and slide the connector onto the male BNC located at the top of the transmitter board, then twist in a clockwise direction to lock it in place.

b) Slide the pre-fitted rubber bulkhead gland down the shaft of the antenna (or cable) and compress the rubber mount until the groove is fully seated in the top plate hole. See diagram 4.

DIAGRAM 4 3/4UHF ANTENNA FITTING



c) For the FUHFDP remote mounted antenna, a fixed cable gland has been pre-fitted onto the cable.

d) Remove the nut from the gland and off the end of the cable. Insert the cable mounted BNC connector through the top plate hole and thread the nut back onto the cable from inside the case. Locate the cable gland in the top plate hole and tighten the nut to lock it in place. Now fit the BNC connector to the transmitter board as in (a) above.

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3.5 Key points to consider when installing this equipment

- a) Never install antennas near or adjacent to telephone, public address or data communication lines or overhead power cables.
- b) Avoid, where ever possible, running antenna coax alongside other cables.
- c) Avoid mounting the transmitter in the immediate vicinity of telephone exchanges or PC equipment.
- d) Always use proprietary 50 ohm coaxial cable for the antenna. If cable runs exceed 5 metres, always use low loss 50 ohm cable such as RG213, UR67 or equivalent.

Coaxial cable intended for TV, Satellite or CCTV installations is normally 75 OHM and therefore totally unsuitable for any Scope transmitter.

- e) The performance of the system will be affected by the type of material the unit is mounted on and its surroundings. The following is a list of materials that this transmitter will be adversely affected by if mounted on or if mounted in close proximity to:
 - i) Foil back plasterboard
 - ii) Metal mesh or wire reinforced glass
 - iii) Metal sheeting, large mirrors or suspended ceilings
 - iv) Lift shafts

All of the above can reflect radio waves and thereby reduce the capability of the transmitter to perform its desired functions.

- f) The circuit boards within this equipment may be harmed by Electrostatic Discharge (ESD). Installers should avoid touching the circuitry wherever possible, and should ensure that adequate anti-static procedures are adhered to at all times (earth bonding with wrist straps, etc).
- g) **Warning!** Never apply power to the system without an aerial attached to the transmitter (note: the system will auto transmit when first powered up).
- h) **Warning!** Carefully check all interface wiring prior to power up. Damage caused by incorrect connection is the responsibility of the installer!

Reference data:

Footprint: (H) 380* x (W) 320 x (D) 110 mm [*840 mm with 3/4 wave antenna]

Wall mounting centres: (H) 344 x (W) 220 mm. Hole Dia. 4.75mm

Power Input: 100-230V ac 50-60 Hz @ 250mA

Battery Backup Supply: 12V 7Ah sealed lead acid battery (not supplied)

[internal mounting kit, cable assembly and fuse is supplied fitted]

Inputs: Fire Zone 1, Fire Zone 2, Fire Zone 3, FP Fault 1, Reset, RX1-3 (reserved).

All inputs are normally closed dry contacts, except Reset, which is normally open.

Outputs: "common fault" indicator, normally open relay contact.

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4) System Power Up

a) Before powering up the system, check that the antenna is correctly fitted and that the mains input wires are securely terminated to the appropriate Live, Neutral and Earth inputs with no exposed strands of wire. An earth continuity check should be undertaken between the mains earth and the system cabinet, checking the points indicated on diagram 6.

b) Perform a continuity check to establish that all used inputs are in the closed state and check that all unused inputs have shorting links fitted.

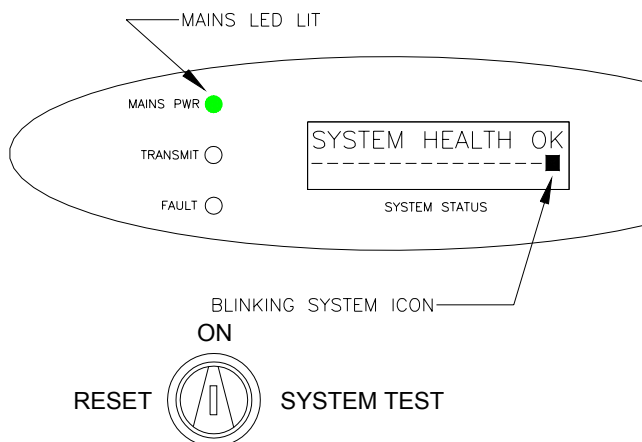
b) Fit the black battery lead to the negative terminal of the battery. This will activate the system and the front panel display will state “MAINS FAILURE” on the top line, briefly followed by “Version 1.XX” on the bottom line, which denotes the firmware revision. The yellow fault LED will light and the warning sounder will beep.

c) Now switch on the mains supply. The front panel display backlight will illuminate and the display will state “SYSTEM HEALTH OK” on the top line. The yellow Fault LED will go out, the sounder will stop beeping and the green Mains PWR LED will light.

d) At regular intervals (default is 50 seconds) the words “TX IN SERVICE” will briefly appear on the bottom line of the display. At this time a test call is transmitted, which is monitored by the pagers used on the system.

e) A system “heartbeat” indicator is provided on the bottom line right hand side of the display, consisting of a blinking square icon. This indicates that the system’s processor is running. In the unlikely event that the processor crashes and fails to self-recover, the icon will “freeze” and stop blinking. An authorised technician will be required to reset the system (see System Reset, Section 7 below).

DIAGRAM 5 POWER ON DISPLAY



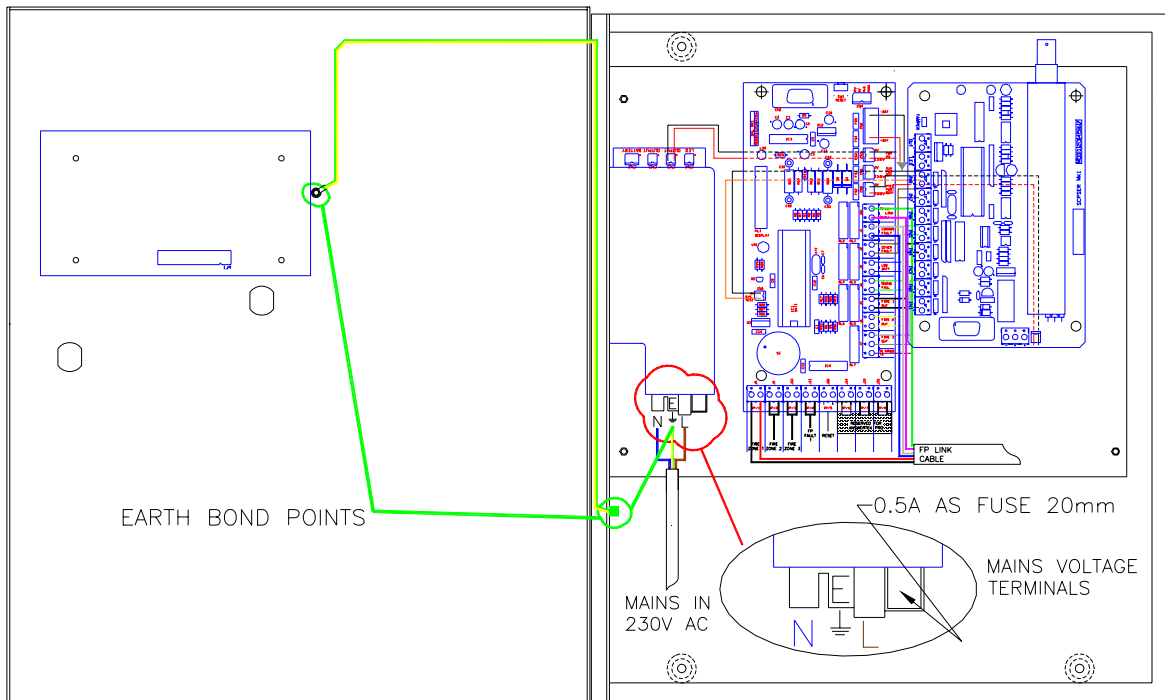
f) **For remote mounted antennas, it is essential at this stage to run the antenna calibration routine to ensure accurate monitoring of the antenna’s condition.** Firstly, check that the antenna is securely mounted in the chosen position and is clear of any temporary obstructions (e.g. ladders, vehicles or other movable objects). Next check that the feeder cable’s BNC connector is securely fitted to the transmitter.

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To initiate calibration, press and hold the Sounder Mute button on the front panel and turn the keyswitch to the Reset position. Return the key to the On position and release the Sounder Mute button. The system will now display “Calibration”, the yellow Fault LED will light and the sounder will beep. This will continue for approximately 2 minutes whilst the transmitter sends a batch of dummy calls. Upon completion, the Fault LED and sounder will clear, and the display will revert to the “System Health OK” status. The antenna is now calibrated to its given installation.

g) The system is now fully operational and ready to receive fire alarm triggers from the host Fire Panel.

DIAGRAM 6 MAINS & EARTH BOND POINTS



5.1 Range Testing

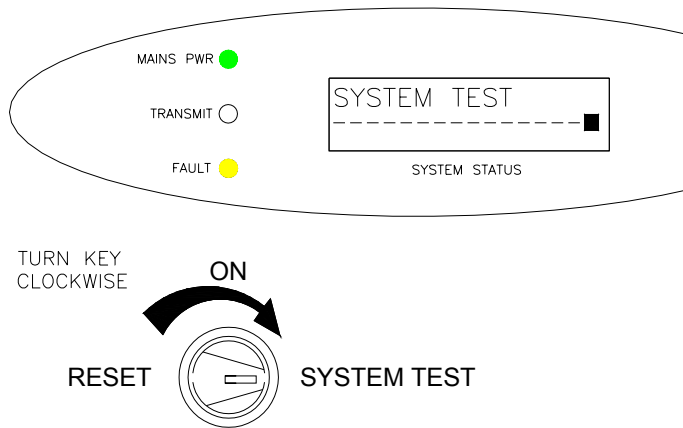
a) For range testing purposes, the In Service TX call (default transmission is every 50 seconds) can be enabled on a pager. This is achieved by manually programming the pager and enabling capcode 4, whose ID is 2000000. The pager will now alert every 50 seconds with the message “IN SERVICE”. The capcode should be disabled by re-programming the pager once coverage checks are complete.

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5.2 System Testing

- a) To check the functionality of the system and the integrity of the radio link, a key-operated Test function is provided on the system front panel.
- b) Inserting and turning the key a quarter turn clockwise will initiate the Test mode, which will send one transmission of the message “SYSTEM TEST” to all pagers present on the system.
- c) Whilst in the Test mode, the display will state “SYSTEM TEST” and the yellow fault LED will be lit. The warning sounder will beep every second as a reminder. See diagram 7.
- d) If the system receives a valid Fire trigger whilst in Test mode, the Fire signal will override the Test message at all times.
- e) Always return the key to the ON position before removal. A spare key is also provided.

DIAGRAM 7 TEST DISPLAY



Note: whilst in Test mode, the “TX IN SERVICE” transmissions to the pagers are suppressed. If the system is left in the Test mode for more than two minutes, the pagers will display “NO SERVICE” until the Test mode is disabled (whereupon the In Service transmissions will resume). This acts as an additional safety feature to ensure that the Test condition is switched off after use.

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6) Fire Alarm Condition

a) If any of the three Fire inputs are activated (by going open circuit), the system will enter the prioritised Fire alert condition and will transmit the Fire message to all pagers. The transmission will be repeated every 10 seconds until the system is reset (see Section 7).

b) The status display will indicate the zone activated e.g. "FIRE ZONE 1", the red transmit LED will light and the sounder will alert continuously. This condition will remain "locked" until the system is manually reset. See diagram 8.

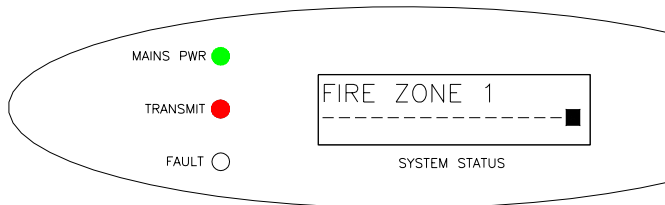
c) Where more than one zone is activated, the display will read:

"FIRE ZONE 1+2"	(Inputs 1 & 2 activated)
"FIRE ZONE 1+2+3"	(Inputs 1 & 2 & 3 activated)
"FIRE ZONE 1+3"	(Inputs 1 & 3 activated)
"FIRE ZONE 2+3"	(Inputs 2 & 3 activated)

d) The Fire messages will always be prioritised and displayed/transmitted ahead of any other messages.

Note: if any Fire input changes state back from open (triggered) to closed, the Fire alert condition will still remain until the Pagetek Pro system is either manually or auto reset.

DIAGRAM 8 FIRE DISPLAY



7) System Reset

a) After a Fire Alert condition, the system must be *manually reset to cancel the alarm. This task must only be performed by an authorised person who has received adequate training in the safe operation of the system.

*[unless the system is auto-reset by the Fire panel using the Reset input]

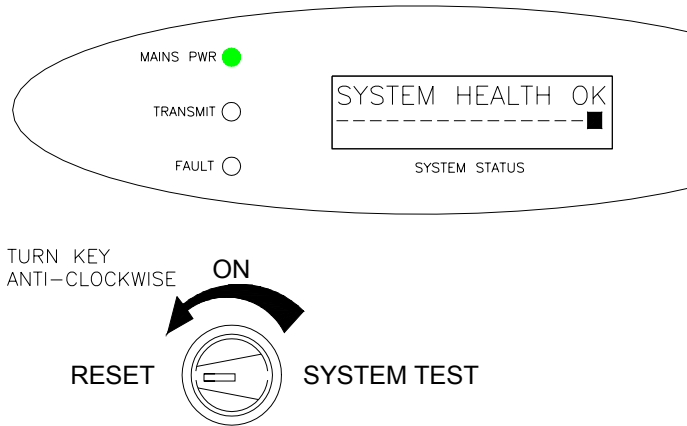
b) Using the front panel keyswitch, insert the key and turn it anti-clockwise to initiate a Reset and cancel the Fire Alert condition. This will silence the sounder, extinguish the red LED and the display will revert to "SYSTEM HEALTH OK"

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d) Now turn the key clockwise back to the “ON” position and remove it. Note the activity in the System Log.

Note: if any Fire input stays active, the system will revert to the Fire Alert condition after the Reset. Always return the key to the “ON” position before removal.

DIAGRAM 9 RESET DISPLAY



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8) Fault Status Indicators

The system's self-diagnostics provides warning alerts for all faults which require the attendance of an authorised service engineer.

8.1 Fault priority

a) After the Fire Alert condition, faults are prioritised in the following order:

- i) FP FAULT 1
- ii) FP LINK FAULT
- iii) ANTENNA MISMATCH
- iv) TRANSMIT FAULT
- v) MAINS FAILURE
- vi) LOW BATTERY
- vii) BATTERY FAULT
- viii) LOW BAT CHARGING

8.2 Identified Faults

i) FP FAULT 1

a) If the Fire Panel Fault input is activated (by going open circuit), the status display will indicate the zone activated e.g. "FP FAULT 1", the yellow fault LED will light and the sounder will beep every second. This condition will remain until the input goes closed.

b) An "Other Fault" message will be transmitted, which may be received by a suitably programmed pager or group of pagers if required (must be specified at time of ordering).

Note: whilst the FP FAULT input is active, "TX IN SERVICE" transmissions to the pagers are suppressed. If the FP FAULT condition remains for more than two minutes, the pagers will display "NO SERVICE" until the fault condition is cleared (whereupon the TX IN SERVICE transmissions will resume). This acts as an additional safety feature to ensure that all users of the system are aware of the fact that the host fire alarm system is faulty or inoperative.

d) The FP Fault message will always be prioritised immediately after the Fire messages and ahead of any other fault messages.

e) The Common Fault output to the host Fire Alarm panel will change to the closed state (normally open relay contact).

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ii) FP LINK FAULT

a) Where an open, short or high resistance connection occurs within the FP LINK cable, the status display will show “FP LINK FAULT”, the yellow fault LED will light and the sounder will beep every second. This condition will remain until the fault clears.

b) An “Other Fault” message will be transmitted, which may be received by a suitably programmed pager or group of pagers if required (must be specified at time of ordering).

Note: whilst the FP LINK FAULT input is active, “TX IN SERVICE” transmissions to the pagers are suppressed. If the FP LINK FAULT condition remains for more than two minutes, the pagers will display “NO SERVICE” until the fault condition is cleared (whereupon the TX IN SERVICE transmissions will resume). This acts as an additional safety feature to ensure that all users of the system are aware of the fact that the link to the host fire alarm system is faulty or inoperative.

c) The Common Fault output to the host Fire Alarm panel will change to the closed state (normally open relay contact).

iii) ANTENNA MISMATCH

a) A missing or shorted antenna will be indicated on the status display within one hundred seconds of its occurrence as “ANTENNA MISMATCH”, the yellow fault LED will light and the sounder will beep every second. This condition will remain until the fault clears.

b) The Common Fault output to the host Fire Alarm panel (normally open relay contact) will change to the closed state where the fault condition remains for at least 10 successive test calls (using the default 50 second test call period = 500 seconds). This prevents nuisance call outs due to momentary fluctuations as a result of birds, vehicles, etc being in temporary proximity to the antenna.

c) Similarly, after the nuisance wait period, the system will still attempt to transmit an “Other Fault” message, which may be received by a suitably programmed pager or group of pagers if required (must be specified at time of ordering).

iv) TRANSMIT FAULT

a) A fault on the transmitter evidenced by either excessively high or low current draw will be indicated within one minute of its occurrence on the status display as “TRANSMIT FAULT”, the yellow fault LED will light and the sounder will beep every second. This condition will remain until the fault clears.

b) The system will still attempt to transmit an “Other Fault” message, which may be received by a suitably programmed pager or group of pagers if required (must be specified at time of ordering).

c) The Common Fault output to the host Fire Alarm panel (normally open relay contact) will change to the closed state.

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v) MAINS FAILURE

- a) In the event of mains power being removed from the system, this will be indicated on the status display as “MAINS FAILURE”. The Mains PWR LED and display backlight will go out and the yellow fault LED will light.
- b) The system will now run on the backup battery supply, but is otherwise fully operational.
- c) To prevent unnecessary intervention where there are temporary glitches in mains power, the system will only activate the Common Fault output after 25 minutes of continuous loss of mains.
- d) Similarly, the system will transmit a “Mains Failure” message only after 25 minutes of continuous loss of mains. This message may be received by a suitably programmed pager or group of pagers if required (must be specified at time of ordering).
- e) The conditions as in (a) will remain until mains power is restored, or until the battery reaches its low voltage condition (after approximately 100 hours*), which will then be indicated on the system status display as in (vi) below.
[* assumes battery was at full capacity immediately prior to the loss of mains]

vi) LOW BATTERY

- a) In the unlikely event that the system has experienced continuous mains failure in excess of 90 hours, eventually the battery will reach its threshold operating voltage (11.5V). This will be indicated on the bottom line of the display as “LOW BATTERY” and the yellow fault LED will flash. The “MAINS FAILURE” message will remain on the top line of the display.
- b) A “Low Battery” message will be transmitted, which may be received by a suitably programmed pager or group of pagers if required (must be specified at time of ordering).

Note: to avoid the possibility of the battery dropping below its final voltage (approx. 10.8V, see manufacturer’s battery data sheet), the system should either have its mains power restored, its battery replaced or be shut down shortly after activation of the Low Battery warning.

- c) Note that the Common Fault output will already have been activated to indicate the original mains failure.
- d) In the highly unlikely event that both the Mains Failure and Low Battery warnings have been ignored, the system will normally continue working for at least a further 10 hours after the Low Battery warning, after which it will display the message “SYSTEM SHUTDOWN”. Even at this stage, the system will still attempt to transmit a Fire alert condition if sufficient power remains.
Note: batteries discharged beyond their final voltage for long periods will no longer be capable of holding a full capacity charge and should be immediately replaced.
- e) Once mains power is restored, the system will recharge the battery to at least 80% of its rated capacity within 24 hours and to its rated capacity within 48 hours.

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vii) BATTERY FAULT

a) If the battery loses connection or develops a fault, this will be indicated within one minute of its occurrence on the status display as “BATTERY FAULT”. The yellow fault LED will light and the sounder will beep every second.

b) An “Other Fault” message will be transmitted, which may be received by a suitably programmed pager or group of pagers if required (must be specified at time of ordering).

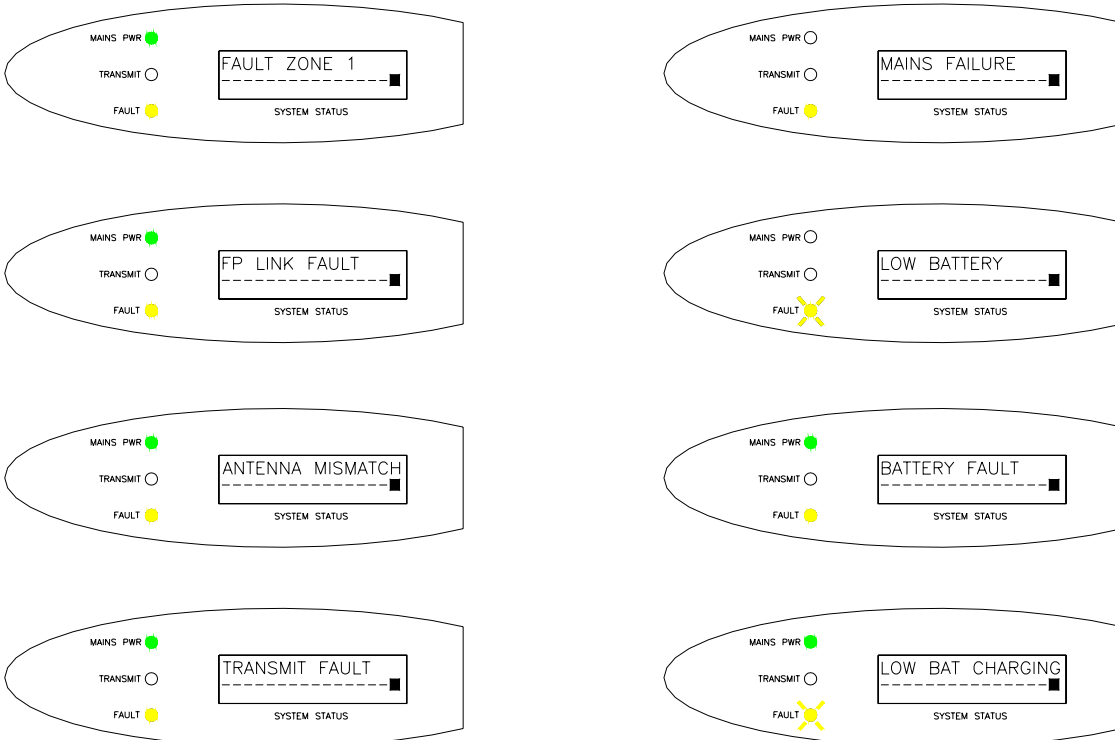
c) The Common Fault output to the host Fire Alarm panel (normally open relay contact) will change to the closed state.

viii) LOW BAT CHARGING

a) After indication of the “LOW BATTERY” condition, when mains is restored the display will change to “LOW BAT CHARGING” and the yellow fault LED will flash. Note that the Common Fault relay output will remain closed until the battery has charged above the minimum threshold (11.5V). After this point, the display will revert to “SYSTEM HEALTH OK”, the Common Fault relay will unlatch and the Fault LED will extinguish.

Note: for all the above listed fault conditions, the Common Fault output will remain in the closed state until the last remaining fault has cleared.

Fault Status Display Summary



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8.3) Sounder Mute Facility

During fault or fire indication, the Pagetek Pro's internal sounder may be silenced by pressing the Sounder Mute button on the front panel. If a new fault or fire condition arises, the sounder will re-activate.

9) Pagers

9.1 In Range Indicator

- a) All applicable Scope pagers are equipped with an In Range indicator function, consisting of an antenna icon on the display, which will extinguish if the pager fails to detect test calls sent by the Pagetek Pro transmitter within a preset time (default is 2 minutes).
- b) When used with the Pagetek Pro system, an additional text message and tactile alert feature is pre-programmed into the pager. If the pager fails to receive a test call within a 2 minute period (test calls are sent every 50 seconds as a default), the pager will display "NO SERVICE" and vibrate until acknowledged by the user. After acknowledgement, the "NO SERVICE" message will remain on the pager until it comes back into the service area.
- c) If the pager remains outside the coverage area, after 15 minutes it will provide a vibrating reminder alert (2-3 seconds), repeated every 15 minutes until back in coverage.
- d) Note that this function will be enabled for any pagers supplied with or for a Pagetek Pro system.

9.2 Low Battery Indicator

- a) All applicable Scope pagers are equipped with a Low Battery indicator function, consisting of a part-empty battery icon on the display, which will appear when the battery needs replacing.
- b) When used with the Pagetek Pro system, an additional text message and tactile alert feature is pre-programmed into the pager. This will display "LO CELL" or "LOW BATTERY" and vibrate (distinct pattern) for 3 seconds, repeated every 15 minutes until the battery is replaced (or becomes exhausted).

9.3 Vibrate alerts

- a) All applicable Scope pagers are equipped with distinct vibrate alerts, so that a LOW BATTERY or NO SERVICE type call can be differentiated from a FIRE type call. In all cases, distinct messages are displayed on the pager's screen. Contact our technical sales team on 01803 860720 for further details and advice on selecting the most appropriate pager for your requirements.

9.4 Hand Programming

Some pagers allow certain features to be programmed manually using the pager buttons. See Annex B for further details.

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System Specification

Mains Input:	90-230V ac @ 50-60 Hz
Mains Power Consumption:	6W max
System Operating Voltage:	14.2V dc
System Power Consumption:	less than 40mA standby, 300mA transmit.
Transmitter:	
Power output:	Not exceeding 500mW
Frequency Range:	459.050, 459.100, 459.225, 459.275 MHz
Channel Spacing:	25 KHz
Adjacent Channel:	better than 200nW @ 4.5 KHz deviation
TX Baud Rate:	512 (default) or 1200 baud
Type Approval to:	ETS 300 224
Type Approval No.	SERILINK
Notified Body No:	0891
General:	
Ports:	5 x dry contact n/c inputs 1 x Common Fault n/o relay contact output COM1: serial port for programming function only
Battery Backup Supply:	12V 7Ah sealed lead acid battery (not supplied) [internal mounting kit, cable assembly and fuse is supplied fitted]
System Conformity:	R&TTE Directive 1999/5/EC EN 300 224 (On-Site Radio Paging) EN 60950 (Safety) EN 301 489 (EMC) Additional EMC requirements of BS 5839-1: 2002. Compliant with BS5839-1: 2002, para. 18 and Annex C.
Footprint:	(H) 380* x (W) 320 x (D) 110 mm
Wall mounting centres:	(H) 344 x (W) 220 mm. Hole Dia. 4.75mm [*840 mm with 3/4UHF antenna]

Scope's policy is one of continuous development and specifications are subject to change without prior notice. E & OE.

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Annex A

Design Certificate

Certificate of design for the Scope Pagetek Pro Fire Paging System located at:

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Scope Communications UK Ltd, being responsible for the design of the Pagetek Pro Fire Paging System, particulars of which are set out below, certify that the said design for which it is responsible complies to the best of its knowledge and belief with the recommendations of Section 18.2 and Annex C of BS 5839-1: 2002, except for the variations stated in this certificate.

Signature:.....Date:

TJ Sams, Managing Director

For & on behalf of: Scope Communications UK Ltd

Address: Quantum House
Steamer Quay Rd
Totnes
Devon TQ9 5AL

Model: PTRO Pagetek Pro
N8T Numeric pager with pre-stored text messages
GEO 40A7 Alphanumeric pager, 40 character
GEO 84ZV4 Alphanumeric pager, 80/160 character

Description: Pagetek Pro Fire Paging System, designed for secondary alerting of the hearing impaired in the event of a fire, when used with a host Fire Detection & Alarm system compliant to BS 5839-1: 2002 and Scope pagers as listed above.

Variations from the recommendations of Section 18.2 and Annex C, BS 5839-1: 2002:

“System” fault indicator takes the form of a blinking block on the system status display, rather than a separate light, as described in section 8.5 of EN 54-2: 1997.

Brief description of areas protected

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.....

Pager model supplied.....

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Annex B

Pager Hand Programming Features

Note: Pagers must be pre-programmed with "Hand Program" option enabled (consult your supplier if in doubt).

Model: GEO 40A7

1. Fit the battery and press the READ key to turn on the pager
2. Whilst the pager is alerting, press the "ESC/Menu" Key and the "READ" Key simultaneously.

This will display the following menu:

Password:
[0000]

Enter the password, then press the Read key. Scope default password is 7276.

- Press the "Left" key to change the previous value and the "Right" key to change the next value.
- Press the "Read" Key to go to the next digit.
- At any time, press "ESC/Menu" key to exit Manual programming menu

3. If the password is entered correctly, the following capcode screen will be displayed:

1 ON 2004000
2 ON 2004008

- pressing "ESC/Menu" key will prompt:

3 ON 2004016
4 ON 2004024

- pressing "ESC/Menu" key will prompt:

5 ON 2004032
6 ON 2004040

- pressing "ESC/Menu" key will prompt:

Freq : 459100000HZ
Baud Rate: 1200BPS

- pressing "ESC/Menu" key will prompt:

Save settings ?
YES

Press Read key to Save new settings and exit.

Model: GEO 84Z

Hold down Enter button (bottom button) to switch pager on.

As soon as power up tone is heard press Select button (second from bottom).

4 digit password prompt should appear on display.

The default Scope password is 7276.

Use Enter button to accept correct digit & Arrow buttons to change values

Use Enter button to accept correct password.

All 6 addresses, frequency & baud rate will now be displayed

Again, use Enter button to accept & Arrow keys to change

After editing, use Select button to accept changes

Use Enter button to accept & save changes, or Select button to exit.

Pager returns to off mode.

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Annex B

Pager Hand Programming Features

Model: N8T

- 1) Remove the battery. Press and hold the top (Read) key and the Down (Select) key together, then re-insert the battery. The pager will display the Password Menu. Scope default password is 7276. Press the top (Read) key to move the cursor to the right and use the Down (Select) key to change the number. Press the up (Exit) key to confirm.
- 2) Each of the four capcodes is displayed in turn. Press the down (Select) key to change the numbers and press the (Read) key to move the cursor to the right. Press the up (Exit) key to confirm. Note: entering a capcode outside the valid range will result in the unmodified capcode being displayed.
- 3) After displaying the capcodes, the frequency will be shown. Use the keys as detailed above to change the frequency. Press the up (Exit) key to confirm.
- 4) After displaying the frequency, the baud rate will be shown. Pressing the down (Select) key will show the options of 512, 1200 and 2400. Press the top (Read) key to confirm.
- 5) To save the new settings, press the top (Read) key. The pager will now restart with the new settings.

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Annex C

Conducting signal strength surveys with Yaesu VR-120D Communications Receiver

For ease of operation, the Yaesu VR-120D supplied has been pre-programmed to the same frequency as your Pagetek Pro system.

Remove the rear battery cover and fit the 2 AA batteries supplied. Press & hold the orange on/off (PWR) button for 2s to switch the VR-120D on. After initialising, the frequency will be displayed, e.g. 459050.

Set the volume (VOL) knob to midway, then adjust the lower control of the same knob (squelch) fully anticlockwise and then clockwise until the noise is silenced. The unit is now ready for your site test.

Enable permanent TX carrier on the Pagetek Pro by fitting the supplied shorting link to CN1 as indicated on the diagram below. Because this is not a normal operating condition, after a few seconds the Pagetek Pro will announce a "TRANSMIT FAULT". This will also operate the Common Fault relay output which is normally connected to the host Fire Panel. It is therefore advisable to disconnect this output (blue and grey wires on the Link cable, see Pagetek Pro Installation manual) before commencing the test.

To cover the whole of your site, the signal strength bar graph that runs horizontally across the bottom of the display should ideally show 5 segments or above. It is advisable to also carry a pager with the In Service capcode enabled (see Installation Manual, section 5, f) for additional confirmation.

It should be noted that many factors can affect the signal strength reading, such as height of the antenna, antenna orientation, proximity to metallic objects etc. In all cases, the scanner should be held at arms length with the antenna in a vertical position.

NOTE! Remember to remove the shorting link from CN1 on the Pagetek Pro and reconnect the Common Fault output after completing your survey.

To prevent accidental reprogramming, the other functions on the VR-120D are locked. For further details on the operation of the VR-120D, please consult the user manual supplied.

For further advice, please contact our technical sales team on 01803 860720.

