

# PAGE SYSTEM DATASHEET

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## Features

- Distributing of public address broadcasts
- Open channel communication
- Indoor, outdoor, ATEX stations
- cost effective S/UTP cabling

## Integrated PAGA and Page Party Communication System

### Description

The BARTEC VODEC integrated PAGA and Page/Party system offers simple to use functionality utilising open channel handset communications and loudspeaker broadcast paging capability, integrated into a simple and easy to use package.

This System enhances the user friendliness of traditional systems by the introduction of "Single Button Paging" – allowing telephone sub-system paging broadcasts over the PA system to be initiated via one pushbutton. This is in addition to fully selective "point to point" two way voice communication realised via modern PABX switching technology.

This System has no special cable requirements (operates over two non-critical cable pairs with overall shield) enabling multiple simultaneous private conversations, trunk line expandability to other PABX central switches or Public Address

live voice, alarm broadcast and open channel "Page" communications.

Amplification is mounted centrally, giving the benefit of unlimited power capacity with no restrictions relating to the number of outstations whilst offering simple and convenient servicing.

A system consists of sub-subscriber outstations, the system range includes:

- Indoor desk/wall mount handset suitable for control rooms, offices, switch rooms.
- Weather proof/bulkhead mount handset suitable for exposed locations, machinery rooms, process areas.
- Explosion proof/bulkhead mount handset suitable for siting in all zone 1 IIC explosive locations (ATEX and NEC505 certified).

### VX/AT System basic operation

#### VAP30 access panel



The operator can initiate live voice routine announcements to a menu of independently addressable paging zones by depressing the required zones of address and selecting the push to talk key.

- Paging chime initiation automatically precedes voice broadcasts
- Emergency speech is distributed to all zones on a priority basis upon preselection of the "important message" key

#### VAP01 Access Panel



- The user selects emergency speech button and live voice access is granted on a priority basis to all zones of address (Routine access is pre-assigned to zone 2 to 4 under one routine push to talk button action)
- Evacuate alarm is initiated to all areas by momentary depression of a dedicated button

## Central equipment core

### VXS



VXS Allows connection for up to sixteen telephone stations and is expandable to 1024 subscribers in sixteen channel increments by specifying additional VX switches as required.

The VXS switch can be stand alone with all (sub)systems connected or integrated into a BARTEC VODEC PAGA public address and alarm system to form a complete supervised paging and alarm broadcast package.

The PABX facility enables regular telephone communications with all subscribers and operation is identical to a standard telephone system.

### Ports

VX switches are designed to plug in/out of the host equipment cubical to facilitate service, it is impractical to terminate plug/socket connectors directly to field cables hence an interposing termination field is required.

VXS is connected to subscribers and PABX switch via termination "break out" ports that convert insulation displacement ribbon cables (IDC) to conventional screw terminals suitable for connection of, for example, standard ship/offshore cable conductors.

### VX/AT Public Address and General Alarm



VX/AT carries the following facilities:

Up to two master access panel positions type VAP30 can be connected allowing the operator to discretely

address up to four independent paging zones, initiate and cancel alarm tone signals manually, attenuate control facility (to reduce alarm tone loudspeaker sound pressure to a pre set level), select emergency priority paging and also determine overall paging system status.

Up to two emergency/routine "group call" voice access units type VAP01 provide emergency voice access, routine paging (on a low priority basis) and initiation of evacuate/abandon alarm tone.

Eight alarm tones are incorporated preassignable IMO and PFEER (i.e. four tones in each selection group). Alarms are each automatically initiated from volt free dry contacts, in addition to manual initiation of alarm 1 to 3 from VAP30 and alarm 1 from the VAP01.

VX/AT incorporates reliable and sophisticated signal processing to assure the highest possible intelligibility of paging speech. VX/AT carries a menu of preannouncement signals (to alert listeners to a voice-paging broadcast) and also incorporates a comprehensive automatic supervisory to provide the operator with an early warning of voice/alarm system deterioration.

VX/AT drives integral front panel status display which provides rapid maintenance and facilitate service. The unit is fitted with interface ports as standard to allow connection to other site systems including, fire and gas detection package, entertainment system, SCADA and event recording facility.

## External systems

### ■ Fire and Gas panel

The Fire and Gas panel can automatically initiate alarm tone menu by interposing volt free relay contact interface. Alarms are issued to all zones, cadence and frequency comply with IMO/NORSOK/PFEER rules.

### ■ Entertainment system

Volt free muting contact to disable the entertainment package(s) during broadcast of alarms and emergency speech.

### ■ Event recording

A Volt free recorder start stop contact plus 0 dBm audio line to enable recording of all voice and alarm traffic for possible incident investigation.

### ■ Supervisory

The VX/AT provides a volt free contact fault report summary to remote paging and alarm system trouble warning.



### Features

- Allows any telephone sub-subscriber to address the site P AGA system
- Totally inhibits acoustic feedback
- Real time monitoring
- Automatic gain control
- Wide frequency response
- Compensates for varying speech level conditions
- Highest intelligibility of speech

## Telephone Interface

### Description

The BARTEC VODEC MSR60 is a solid-state temporary voice store designed to completely eliminate acoustic feedback (Larsen effect) when PABX telephone subscribers are allowed access to a BARTEC VODEC PAGA broadcast paging system. Without MSR60 live telephone handsets in the vicinity of public address loudspeakers would be prone to the detrimental affects of acoustic feedback with attendant corruption of the voice message broadcast.

The MSR60 comprises of a rot proof rugged ABS plastic enclosure which houses a single motherboard based electronics module that carries field cable terminations, power supply and voice storage processor.

The unit is designed for safe area wall/bulk head mounting and should be ideally located adjacent to the PABX switch.

MSR60 is designed to interface to the PABX switch by either "2/4-wire E and M" port or "2-wire subscriber" line. Output interface to the host paging broadcast system is by 0dBm audio line and dry "push to talk" PTT contact.

Note: the unit is equipped, as standard, for duplicated A and B system execution; hence 2 x fully isolated audio and PTT contacts are fitted to enable independent host control (thereby possibility). Connection between the MSR60 and host PAGA rack is by 2 x pairs of conductors per A and B PAGA system.

The unit operates as follows:

- Telephone subscriber dials the number corresponding to the MSR60 PABX port input (this is programmed in the PABX switch, e.g. 555 is dialled to access the PAGA system).
- The MSR60 is accessed by the PABX and returns a short prompt tone to the subscribers earpiece via the PABX
- Subscriber issues message which is stored in MSR60 semiconductor memories, (up to 60 seconds of text can be stored) with a second prompt tone given to the subscriber after 50 seconds, to flag memory expiry imminent.
- Upon subscriber returning the handset to cradle, the MSR60 now replays the stored message over the broadcast system loudspeakers.

MSR60 incorporates a high performance speech processing sub-system that includes AGC (automatic gain control) essential for maximising amplifier efficiency and a wide bandwidth speech storage medium, which assures high voice intelligibility.

The engineer is able to configure the MSR60 to deliver the stored message once, twice or four times depending on tamper proof switch settings.

Zoned broadcasts:

The MSR60 carries a DTMF decoder that enables subscriber broadcast area selectivity.

For example a paging broadcast might only be required in a certain area of the plant, by keying a zone up to eight discretely selectable zones are possible with a single P3-MSR60, i.e. dial "1" = zone 1: dial "2" = zone 2 and so on.

The MSR60 incorporates a "real time" monitor/censor facility, MSR/2C, that enables the operator to listen to the subscriber text as it is recorded by the store via an extension loudspeaker facility.

In the event that the message being recorded is undesirable the operator can depress a RESET key which returns the store to quiescent.

A second latching (press on press off) "DISABLE" key allows the operator to inhibit the MSR60 facility completely.

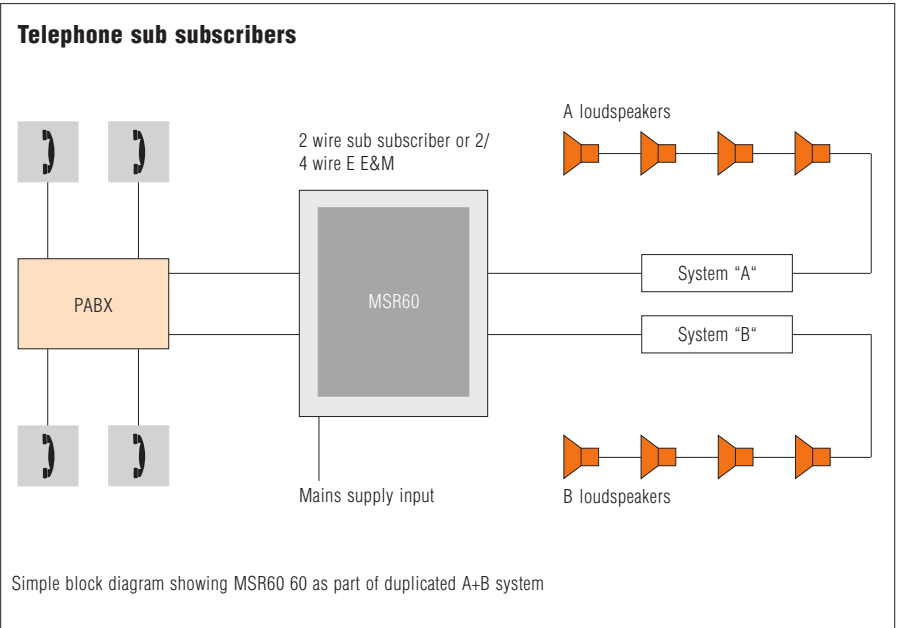
The optional MSR/2C monitor panel consists of a standard 19 inch 2 unit high panel which carries loudspeaker and operator push button controls, the MSR/2C monitor panel to the MSR60 voice store and telephone interface unit.

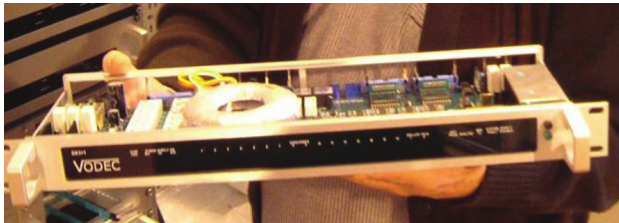
The MSR60 is energised from AC mains supply via an integral universal supply converter which allows operation from power supply inputs raging from 100V AC to 250V AC *without* link selections.

A secondary input is available allowing MSR60 to operate from 24V DC mains supply.

Technical Data

- Supply**  
100 – 250V AC 50/60Hz, DC 24 V
- Consumption maximum**  
20 Watts
- Heat emission**  
5 Watts
- Input interface, trunk**  
2 or 4 wire E and M port
- Input interface, subscriber**  
2- wire subscriber
- Output interface**  
2 X 0dBm 600 Ohm audio lines  
2 X Volt free change over contacts rated 0.25A @ 24V AC
- Storage time**  
60 seconds 3.4kHz
- Bandwidth**  
3.4kHz
- Record volume control**  
High – low
- Playback volume control**  
High – low
- Monitor loudspeaker output**  
500mW
- Loudspeaker output impedance**  
8 to 16 Ohms
- Size**  
200 mm wide  
75 mm high  
120 mm deep
- Weight**  
1.7 kg
- Temperature range**  
-20 °C to +60 °C
- Humidity**  
Up to 100%
- Environmental rating**  
IP65
- Enclosure material**  
ABS plastic





## Features

- Non critical field cable requirement
- Open channel communications
- Safe and ATEX certified stations
- Low cost installation
- Hazardous area communications

## Page Party Intercom System

### Description

The BARTEC VODEC VXS based paging/ intercom system facilitates the following communication plan specifically for offshore/petrochemical installations:

- All call paging on two priority/ zone levels, i.e. Routine page all subscribers, Emergency page all subscribers.
- Open channel "party" communications
- Point to point selective handset to handset communications.

The system supports a range of subscriber access positions and is expandable up to 1012 stations.

#### The VXS consists therefore of:

- Central equipment rack
- Subscriber station:
  - Safe area/office style
  - Weatherproof/marine outdoor protected
  - ATEX certified Zone 1 protected

Connectivity is by a non critical two pair cable which can be CAT5 or similar telephony cable.

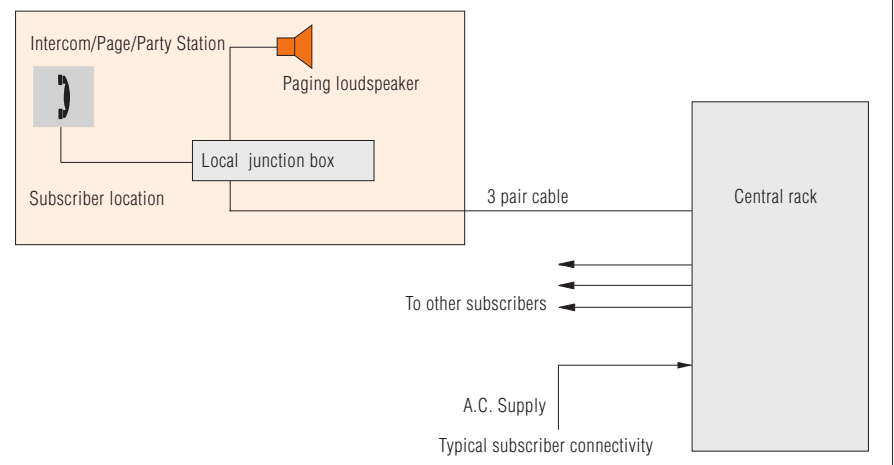
The system allows loudspeaker voice paging to all or a nominated subscriber group, access is on a priority basis which ensures only one subscriber can address the intercom paging loudspeakers at any one time.

Priority is configured either on a "first come/first served" basis or on a "descending" access basis. Open channel party line communications allow hot line handset to handset two way full duplex speech on a non private basis.

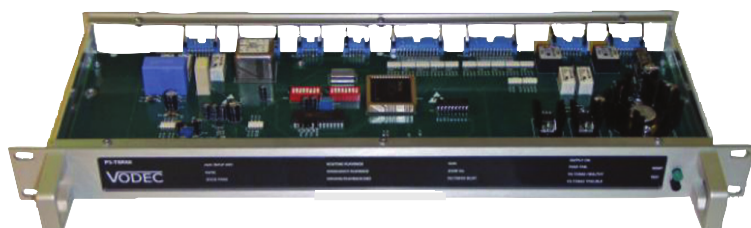
Selective point to point subscriber connectivity is fitted which facilitates private handset to handset communications; up to four simultaneous speech channels are fitted with option to extend in blocks of four speech paths.

The VXS switch can be stand alone or integrated into a BARTEC VODEC PAGA public address and alarm system to form a complete supervised paging and alarm broadcast package.

### Diagram







## Features

- DIP switch configurable
- Duplicated A+B PAGA interface
- Integral LED status display
- Rapid installation, service
- Simple secure N+1 online/hot-standby implementation
- Rapid fault diagnosis/trouble shooting

## Message Record/Playback Device

### Description

The BARTEC VODEC TSR60 is a non-volatile message record/playback device designed to store and re-play telephone handset input high definition speech over a Vodec PAGA (Public Address and General Alarm system) broadcast system.

The unit obviates the detrimental effects of acoustic feedback due to the proximity of live telephone subscriber handsets to PAGA loudspeakers.

The TSR60 comprises of a 19 inch 1 U rack mount enclosure which carries integral LED status display and plug in/out flat ribbon cable connectors which facilitate rapid installation, service and connection to the host system.

A charge coupled CCD memory device records up to 120 seconds of speech under control of VSOC (Vodec System On a Chip) which eliminates dependence on conventional microprocessor/controller sequentially executed code.

The TSR60 accepts 2/4 wire E&M or 2 wire subscriber interface from the site telephone PABX and provides duplicated isolated A/B PAGA outputs.

The TSR60 enables the user to determine both the priority level of the intended message broadcast and the target zone of address.

Configuration selection within the unit allows default low priority routine broadcast to all zones except zone 1, however (zone 1 on PAGA is normally reserved for those sites where routine broadcasts are inhibited to certain locations e.g. sleeping quarters) the TSR60 can be set to direct stored messages to all zones on a high priority emergency speech basis.

This can be featured as a default or under control of the set by appending digits 00 to the telephone interface access number when prompted to do so.

When the TSR60 is used in conjunction with ZTE4-20 the telephone user can direct the stored message to a menu of pre-selected zone(s) of address replay to a particular loudspeaker group.

The TSR60 is fitted with tamperproof configuration switches that allow the engineer to pre-select features including the following:

- "Message replay repeat" – message is broadcast one, two or three times
- 2 wire subscriber or 2/4 wire E&M PABX interface.
- "Maximum store time limit" – limits record time to 8 seconds maximum to prevent recording of lengthy messages.
- "DTMF record time sequence control" – enables the user to terminate message recording by telephone keypad entry.
- Enable or disable a pre-announcement chime.
- Select normal operation or live voice broadcast
- Enable "Morse code" transmission instead of speech.

The real time monitor facility enables a normally manned operator position to listen to messages being recorded into the TSR60 prior to PAGA system broadcast. Undesirable messages can now be deleted by the operator before distribution to the PAGA loudspeaker networks.

## Technical Data

### Supply

DC 48 V

### Consumption

5 W

### PABX interface

2 wire analogue subscriber 4/2 wire E & M trunk

### Frequency response

200 Hz bis 3 kHz

### Output

Duplicated A + B audio channels  
Duplicated A + B routine key PAGA  
Duplicated A + B emergency key PAGA  
Duplicated A + B zone selection

### Dimensions

483 mm wide (19" rack mount)  
44.5 mm high  
150 mm deep

### Weight

0.5 kg

### Temperature range

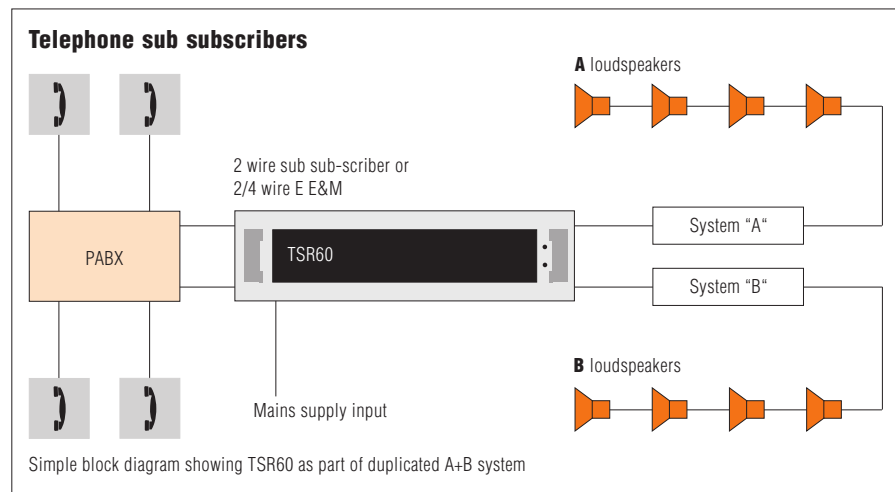
-20 °C to +60 °C

### Heat emission

3 W

### Store time

120 seconds





## Features

- 8 party lines
- Dual priority emergency/routine paging access
- Integrated status display
- Selective point to point communications
- Multiple simultaneous conversions
- Operational call and safety emergency access
- Private handset speech

## Page Party Line Processor

### Description

The BARTEC VODEC VXS-8 is a compact 1 unit 19 inch rack mount unit designed to allow subscribers to address PAGA broadcast loudspeaker networks and to support up to eight discrete party line communication channels.

Each VXS-8 shelf provides connection for up to sixteen handsets with cascade switching capability to maximum of 512 stations.

The unit is connected to the host panel by locking quick release flat ribbon cable connectors which enable rapid installation/service.

VXS-8 consists of a robust enclosure which houses a single surface mount (SMD) P.C. style motherboard, fascia mounted LED status display array and rear panel plug/socket connectors.

The page/party system handsets are connected to the VXS-8 switch by a noncritical standard 2 twisted pair 18 AWG minimum size shielded/ screened field cable.

No special multi core cables are required with this system. Field cables are landed onto VXS-8 port which is equipped with screw terminations ribbon cable conversion to allow direct connection to the VXS-8 switch.

VXS-8 incorporates VSOC (BARTEC VODEC system on a chip) technology that obviates conventional software based solutions.

This eliminates possible latent software bugs, software license requirements, reboot/boot ups following supply brown outs and vastly improves EMC tolerance.

The VXS-8 switch extends paging capability to all handsets, enabling single button address of PAGA system loudspeakers on a "push to page". A second button allows the subscriber enter party communication. Up to 8 party lines can be held at any one time.

Possible risk of acoustic feedback due to proximity of a PAGA loudspeaker to a live sub-scriber handset is obviated, by either real time muting (RTM), or digital delay feed forward (DDF).

VXS-8 obviates antiquated technology, mechanical rotary switches and instead, employs modern vandal resistant push button key pads, which have become commonplace on conventional telephone apparatus.

The VXS-8 switch also allows subscribers to establish point to point selective telephone PBX style communications, in addition to the embedded eight party line connectivity.

This maybe be implemented by incorporation of an automatic telephone switch either within the PAGA system or as an interface to a PABX external to the BARTEC VODEC package.

### Technical Data

#### Supply

DC 48 V + 15 %

#### Consumption

350 mA

#### Number of P3 subscriber inputs

16

#### Subscriber interface

4 wire

#### Weight

1 kg

#### Dimensions

483 mm wide (19" rack mount)

44.5 mm high

160 mm deep

#### Heat emission

2 W

#### Temperature range

-20 °C to +60 °C

#### Operating system

VSOC (BARTEC VODEC system on a chip)



## VXS-8 subscriber operation

The VXS-8 system operates in three modes:

- Handset paging over secure PAGA loudspeaker networks
- Open party line handset communications
- Point to point PABX based selective private handset communications

To enter "page" mode, the subscriber lifts the handset and depresses "push to page" button and maintains whilst delivering the paging message. Upon message completion the "push to page" button is released. Paging is delivered to the PAGA loudspeakers on a "routine priority" level and is over-ridden by other higher priority PAGA access sources.

The VXS-8 allows the subscriber to manually select one of eight open channel party lines. Party lines are non private.

To access the party bus switch the subscriber lifts the handset and depresses the party line button momentarily. The subscriber can then select the party line number as required. When the user returns the handset to the cradle hook the selected party line is released. It should be noted that party line talk time can be limited to obviate possible spurious party line engagement due to handset left off hook following a party communication.

The user may "hop" from party line to party line by momentarily pressing party line button. Then select party line number.

The panel can be equipped with a PABX or can be interfaced to an external PABX switch. Where this facility is included the P3 subscriber can initiate point to point conventional selective telephone communications.

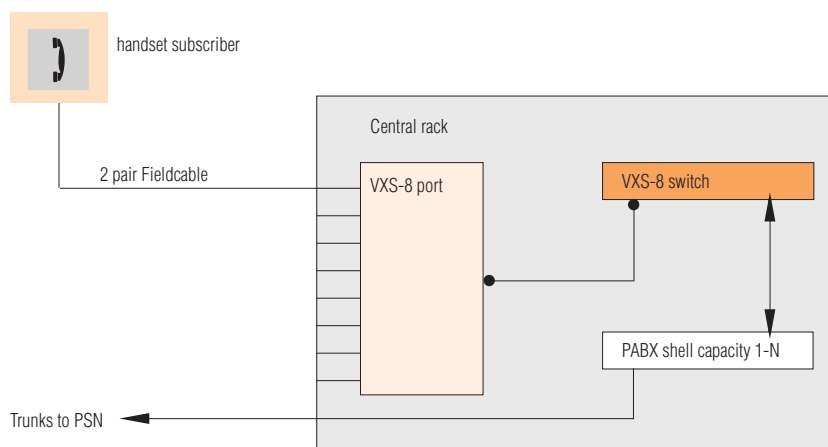
At any time the subscriber can leave the PBX architecture and enter either page or party mode by depressing the appropriate page/party button.

The VXS-8 switch is fitted with a comprehensive LED display that clearly provides the following details:

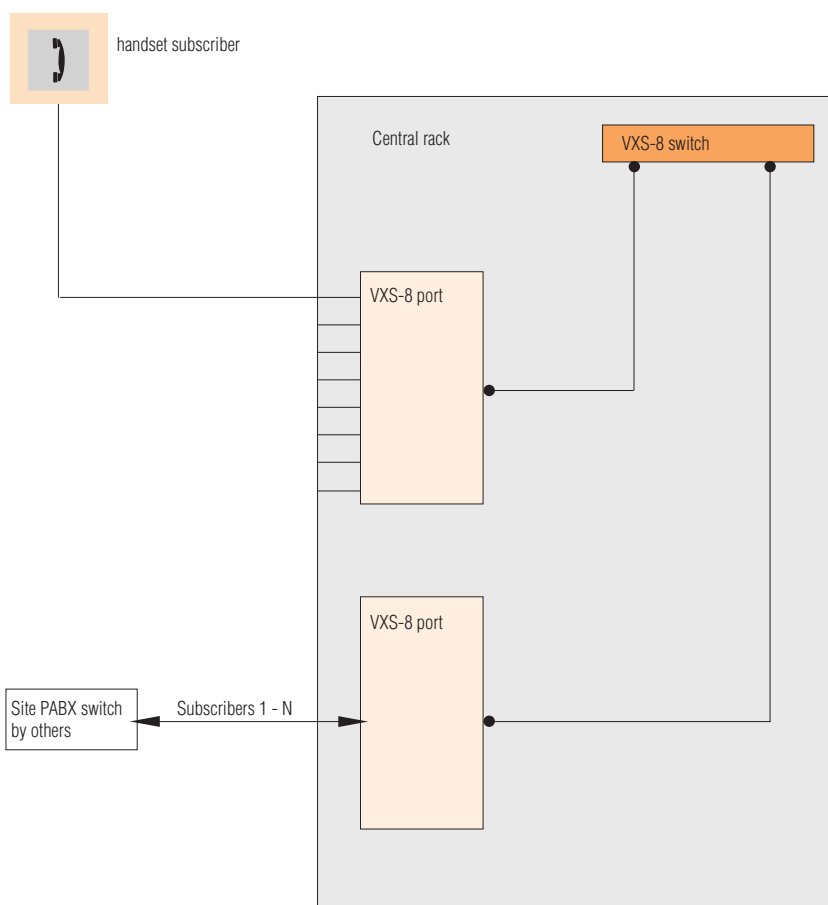
- Subscriber page status routine/emergency
- Subscriber party bus selected status
- System status

The VXS-8 is connected to the host PAGA system by a single ribbon cable which carries emergency, routine paging access as well as phantom DC 48V power supply.

**Diagram** Simple diagram showing arrangement with integral PBX capability.



**Diagram** Simple diagram showing arrangement with external PBX capability.



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