SigTEL

1-224 line emergency voice communication system

Fire Telephone

Push To Open

Emergency Voice Communication System

Instructions

Emergency Call

Emergency Voice Communication System

Call in Progress

Push to Call or Answer

EVCS

SigTEL Compact

ECU-224 Desk Controller

disabled refuge systems
fire telephone systems
stadium marshalling systems

You're safe with **C-TEC**

SigTEL

1-224 line emergency voice communication system

For most people, a simple instruction like "please leave the building by the nearest available exit" can be acted upon quickly and easily. But for wheelchair users, the disabled and infirm, this isn't always the case.

Current Building Regulations recognise this and insist all new non-domestic buildings with more than one storey provide 'refuge' areas – relatively safe places where people who cannot easily use fire escapes and evacuation lifts can call for assistance and wait until help arrives.

Simple, effective two-way communication in these areas is essential, firstly to assist rescue teams in determining where assistance is required and secondly to reassure people help is on the way.

Communication systems in refuge areas are known as Emergency Voice Communication (EVC) Systems and SigTEL is suitable for use in all types of EVC application – be it a disabled refuge, fire telephone or stadium marshalling system.

Incredibly easy to use and offering true duplex speech, SigTEL meets and exceeds the requirements of standards such as BS 5839 part 9 in all areas and is hugely cost-effective in comparison to other systems on the market.

Key features of our new, improved SigTEL emergency voice communication system

- New-look 4, 8 & 16 line master controllers with semi-recessed handsets save valuable space in crowded control rooms

- Enhanced networking facility allows up to 14 master controllers to be interlinked for systems of up to 224 lines

- New optional 224 Line Desk Controllers allow operators to communicate with up to 224 disabled refuge or fire telephone outstations from a single accessible point

- Optional anti-tamper enclosures available for controllers located in areas accessible to the public

- Wide range of 'Disabled Refuge' (Type B) outstations available in stainless steel or green steel (flush, surface or weatherproof options available)

- 'Fire Telephone' (Type A) outstations available in locking or non-locking red steel cabinets

- All outstations offer true duplex speech and can be mixed and matched to suit the application

- Unique 'auto-learn' facility allows fast system set up

- Devices can be named/edited using the buttons on a master controller or via an optional PC programming configurator (part no. EVC423).

- All extensions can be named with user-defined text of up to 15 characters

- Fully monitored hardware and software

- System operates at 24 VDC. In the event of mains failure, operation can be maintained for 24 hours (standby) and 3 hours (in use) using 2 x 12V 7 Ahr batteries

- Optional FiTT line tester allows cable faults to be checked prior to equipment connection

- Easily interfaced to accessible toilet alarm systems, hearing loop systems, strobes or CCTV activation relays

- Ideal for disabled refuge, fire telephone and stadium marshalling applications

- Perfect for hotels, shopping malls, office blocks, transport terminals, sports stadiums, entertainment complexes, etc.

What is an Emergency Voice Communication (EVC) System?

An emergency voice communication system is a life safety intercom (or telephone) system designed to operate reliably in a fire alarm emergency. Its equipment and wiring must be monitored for faults that might occur prior to the emergency and its cabling and battery backup supply must ensure it keeps working during the emergency. According to BS5839 part 9, there are two types of EVC system; disabled refuge and fire telephone. They may be separate, or they may be combined into one system.

Disabled refuge systems

A disabled refuge system typically connects handsfree intercom outstations to a central control room and is used to inform management that someone needs immediate assistance to exit the building.

Fire telephone systems

A fire telephone system is used by management (and marshals at a sports ground) and the fire service before, during and after a fire to communicate with fire marshals and fire fighters.

Regulations affecting EVC systems?

The installation of an emergency voice communication system is governed by BS5839 Part 9: Code of practice for the design, installation, commissioning and maintenance of emergency voice communication systems.

Disabled Refuge Systems are called for by:

• Building Regulations; Approved Document B (Fire Safety); Volume 2, Section 4: Design for vertical escapes

• BS9999`: Code of practice for fire safety in the design, management & use of buildings; Clause 41.9 Communications; Clause 46.8 Use of refuges

• Regulatory Reform Order (Fire Safety Order) Oct 2005
Risk assessments undertaken by the responsible person must make provision for means of escape for disabled people. Supplementary Guide: Means of escape for disabled people

• Equality Act 2010 (supersedes the Disability Discrimination Act)

• UN Convention on the rights of people with disabilities

Fire telephone systems are called for by:

• BS9999`: Code of practice for fire safety in the design, management and use of buildings; Clause 24 Communication systems for fire and rescue service use

• London District Surveyors Association in conjunction with LFCDA Fire Safety Guide No. 3; Section 2: Fire Safety Measures

• London Fire and Civil Defence Authority (London Fire Brigade) Fire Safety Guidance Note Number: 30 (Rev 3)

• Guide to safety at sports grounds; 16.11: Telephone communications – internal

## Where are disabled refuges / Type B outstations required?

Refuge areas are called for in all non-domestic buildings with more than one storey and they should be provided at each storey exit (i.e. each protected stairway affording egress).

Examples of a refuge area include an enclosure such as a protected lobby, corridor or stairway or an area in open air such as a flat roof, balcony, podium or similar place which is sufficiently protected (or remote) from any risk of fire and has its own means of escape.
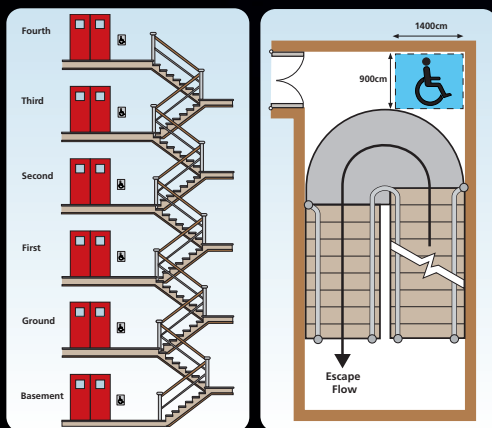

Examples of a Type B outstation installed in the protected stairway providing egress from each storey

Type B outstations should be provided in all refuge areas. They should be wall mounted, in an easily accessible, well illuminated and unobstructed position 900 mm to 1.2 m above the ground. They should allow members of the evacuation team to determine how many disabled people there are, the nature of their disabilities and the refuges in which they are located.
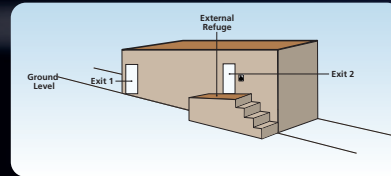
Example of a Type B outstation installed on an external fire escape staircase providing egress from each storey (right) and the final exit (left).
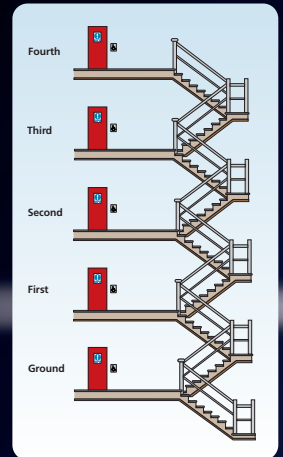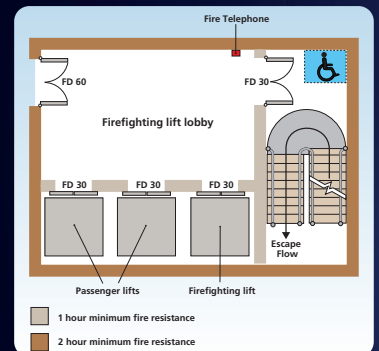
Note that refuges are intended for temporary use only (a few minutes) whilst building management are sending trained staff to deal with the evacuation and should not be confused with "places of relative safety".

Where are fire telephones / Type A outstations required?

In buildings which require a fire telephone system, Type A outstations should be located at every fire fighting entrance point, fire escape landing and fire fighting lobby. They should be wall mounted 1.3 m to 1.4 m above the ground in an easily accessible, well-illuminated and unobstructed position.

In sports stadiums, emergency telephones should be located no more than 30 metres from stewards' positions or other normally manned areas such as turnstiles, public address operating booths, offices of senior officials, lighting control points, first aid rooms, police rooms, etc.

They should allow communication between management and/or fire marshals and/or the fire service before, during and after a fire.

Example of a Type A outstation installed opposite a firefighting lift within the firefighting lift lobby on each floor

Master Controller Location

The system's Master Controller should be located in the control room, security room or next to the main fire panel or repeater panel and it should be permanently manned in an emergency. The centre of the Controller's controls (if wall mounted) for a standing operator should be 1.4 m to 1.5 m above the floor.

If the power supply to the Controller fails, the batteries provided should run the system in its quiescent state for at least 24 hours and then allow emergency voice communication for at least 3 hours. The Controller (and all Outstations) should also offer full duplex speech, i.e. the concurrent transmission and reception of speech in both directions.

Communication between the Controller and an Outstation should normally be initiated from the Outstation. However, the ability to call an Outstation from a Controller is also allowed. Indeed, standards such as BS5588 part 8 acknowledge keeping people informed during an emergency will help avoid anxiety and confusion.

Cables, wiring and interconnections

All of the cables used in an EVC system should be of enhanced fire resistance (26.2e of BS 5839-1:2002) except for underground sections of cabling at sports grounds.

Inspection and servicing

Inspection and servicing should be carried out every six months by a competent person/organisation with specialist knowledge of the installed equipment.

SigTEL Controllers

SigTEL comprises a range of low-cost wall-mounting Controllers which can handle 4, 8 or 16 lines.
Typically located in a building's control room or a fire services access point, each Controller allows management and/or the emergency services to communicate via telephone-style handsets with the system's 'outstations'.
Optional network communication cards can be used to interlink up to 14 Master Controllers for systems of up to 224 lines.

SigTEL Master Controllers (ECU-4 / ECU-8 / ECU-16)

- Allows operators to communicate with the system's outstations
- ECU-4 can be connected to up to 4 outstations
- ECU-8 can be connected to up to 8 outstations
- ECU-16 can be connected to up to 16 outstations
- Supplied with a backlit LCD and handset
- Requires 2 x 12V 7.0 Ah batteries
- Can be semi-flush mounted using the EVC385 bezel
- Optional tamper-resistant enclosures available

SigTEL Desk Controllers (ECU-224)

- An optional attractively-designed 224 line SigTEL Desk Controller
- Allows operators to communicate with up to 224 disabled refuge or fire telephone outstations
- Must be connected to an ECU-4, ECU-8 or ECU-16 Master Controller via an ECU-723 interface/network card
- See wiring schematic for further details
- Not compatible with ECU-8NT controllers

Network Communication Cards (ECU722 / ECU723)

- The ECU722 allows up to 14 ECU-4, ECU-8, ECU-16 or ECU-8NTs to be interlinked over a 1KM network (one ECU722 required per controller)
- To network a controller that has an optional ECU-224 desk controller connected use an ECU723 interface/network card instead
- Any ECU-4, ECU-8, ECU-16 or ECU-224 can take control of the system at any time by the input of a special code
- For networked systems that do not require multiple control points, ECU-8NT Controllers without handsets are available
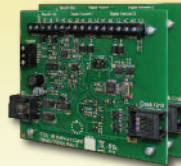
Anti-tamper Stainless Steel Enclosure (BF359/3M)

- An attractive flush-mounting tamper-resistant cabinet for housing new-look ECU-4, ECU-8 or ECU-16 master controllers
- Helps ensure controllers remain operational at all times by reducing the risk of vandalism
- Two lock kits are also available - a CAM lock kit (BF359/3CL) and an electromagnetic solenoid kit (BF359/3SL)
- Measures W 725 x H 448 x D XXmm

controller not included

SigTEL Disabled Refuge & Fire Telephone Outstations

Two types of outstation are available - Type B (handsfree intercom-style) outstations for disabled refuge applications and Type A (telephone-style) outstations for fire telephone and/or stadium marshalling applications. Both versions offer high quality, full duplex speech and connect to SigTEL ECU-4, ECU-8 or ECU-16 Controllers using two cores of 1.5mm^2 of enhanced fire rated cable of up to 1 KM in length.

Type B Green Refuge Outstations (EVC302GF / EVC302GS)

- Allows anyone in a disabled refuge to communicate with building control at the touch of a button and vice versa
- Finished in tough, durable green steel
- Flush (EVC302GF) and surface (EVC302GS) versions available
- Includes connections for an optional induction loop system
- Easily interfaced to strobes, CCTV activation relays and/or accessible toilet alarm systems

Type B Stainless Steel Refuge Outstations (EVC302F / EVC302S)

- Allows anyone in a disabled refuge to communicate with building control at the touch of a button and vice versa
- High-quality brushed stainless steel finish
- Flush (EVC302F) and surface (EVC302S) versions available
- Includes connections for an optional induction loop system
- Easily interfaced to strobes, CCTV activation relays and/or accessible toilet alarm systems

IP66 Rated Enclosure for Type B outstations (BF359/1)

- An attractive IP66 rated enclosure designed for use with our Type B **flush** disabled refuge outstations
- Includes a handle and mounting plate.
- Measures 200 W x 302 H x 123mm deep.
- Textured RAL7035 (light grey) finish with green sticker.

Type A Fire Telephone Outstations (EVC301RPO / RLK)

- Designed for use in fire telephone and stadium marshalling applications
- Allows fire marshals/stewards to communicate with building control via a telephone handset and vice versa
- EVC301RPO includes a telephone handset in a push-to-open red steel cabinet. EVC301RLK is the same but has a 'lift-key' lock mechanism
- Both versions can be flush mounted using a T-BEZ301 bezel

SigTEL Accessories

A range of cost-effective SigTEL accessories comprising a programming configurator (to speed up the naming/editing of extensions), a battery-operated line tester (to simplify installation and commissioning), a blue and amber strobe (to provide visual indication of an incoming call), a hearing loop system (to assist hearing aid users) and an accessible toilet alarm system (to allow communication to take place in accessible toilet areas).

EVC423 Programming Configurator

- Facilitates quick and easy editing of outstation/extension names via a Windows-compatible PC
- Includes a software CD, configurator and mini USB to master controller connection lead
- Set up can be saved to, and from, a PC

XSB Xenon Strobe

- Can be interfaced to a Type A or Type B SigTEL outstation to provide visual indication of incoming calls
- Flashes blue when activated
- Requires an Strobe Driver Module (order code SDM) & 12V PSU

FITT Line Tester

- A must-have commissioning tool
- Allows cable faults to be checked and cleared prior to equipment connection
- Includes all of the test cables and connectors you need

ML1/K1 Hearing Loop Kit

- A cost-effective hearing loop system easily interfaced to a Type B outstation's loop connectors
- Exceeds the magnetic field strength requirements of BS EN60118-4 when the loop is correctly installed at ceiling or floor height (exact location will depend on the application and building)
- Helps facilitate compliance with the Equality Act

NC951 Accessible Toilet Alarm Kit

- Includes everything required for a BS8300 compliant emergency assistance alarm
- Easily interfaced to a SigTEL master controller or Type B outstation via its volt-free relay contacts

If connecting to a Type B outstation, activation of the WC alarm will have the same effect as pressing the outstation's call button. When the call is answered. a direct speech channel will be established between controller and outstation.

If connecting to a master controller, a WC call will appear on the controller's display to show somebody needs help but no speech channel will be opened.

SigTEL Roaming Handsets and Jack Plates

EVC301/JP Fire Telephone Jack Plate

- Ideal for use in regions where 'roaming handsets' are allowed (typically the Far and Middle East. Not for use in the UK)
- Multiple jack plates can be connected to a single SigTEL line in stairwells/risers, etc.,
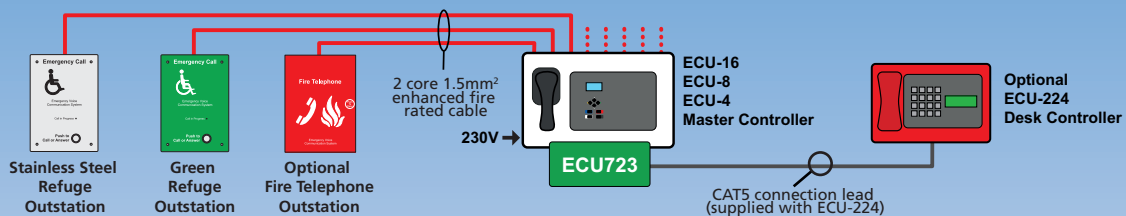- All plates include a 1/4" jack socket.

EVC401/PH Portable Handset

- Plugs into an EVC301-JP jack plate
- Once inserted, a call will be made to the SigTEL controller from where a speech channel can be opened.
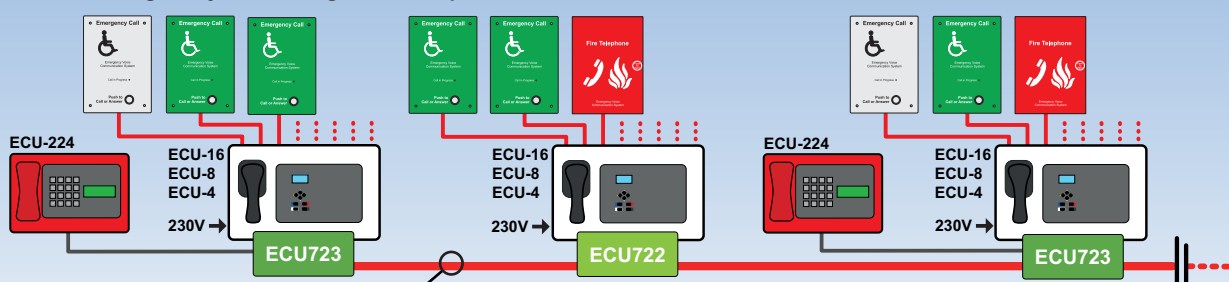- Refer to our Roaming Handset datasheet for further details.

SigTEL Wiring Overview

Basic SigTEL system wiring with an optional ECU-224 Desk Controller connected

Emergency Call — **Stainless Steel Refuge Outstation**

Emergency Call — **Green Refuge Outstation**

Fire Telephone — **Optional Fire Telephone Outstation**

2 core 1.5mm² enhanced fire rated cable

230V →

ECU723

ECU-16 ECU-8 ECU-4 Master Controller

CAT5 connection lead (supplied with ECU-224)

Optional ECU-224 Desk Controller

Networked SigTEL system wiring with multiple ECU-224 Desk Controllers connected

ECU-224

ECU-16 ECU-8 ECU-4

230V →

ECU723

ECU-16 ECU-8 ECU-4

230V →

ECU722

ECU-224

ECU-16 ECU-8 ECU-4

230V →

ECU723

Communication network (only required on networked SigTEL systems). ECU722 & ECU723 cards mount inside master controllers. Wire the network in 4 x 2 core 1.5mm² enhanced fire rated cable. Total network length = 1km. Total no. of networked controllers = 14 (or 224 lines) ECU723 cards are only required if using an optional desk controller. If a desk controller is not required use an ECU722 card instead. Master controllers without handsets (ECU-8NT) are also available but these are not compatible with ECU-224 desk controllers.

SigTEL Emergency Voice Communication System Technical Specifications

MASTER CONTROLLERS (ECU-4 / ECU-8 / ECU-16 / ECU-8NT)

Power Supply	
Mains supply	230 VAC, 50/60 Hz
Power supply output 1	24 VDC
Power supply output 2	5 VDC
Output current @ 24 VDC	0.5 A max
Supply and batteries monitored for failure	Yes
Standby battery requirements (size and type)	2 x 12 V, 7 Ah VRLA (Valve Regulated Lead Acid) connected in series
Mains fuse 1 A (T)	20 mm HRC
Battery fuse 1 A (F)	20 mm
Max. current draw from battery (Mains failed)	500 mA (16 Type B outstations fitted (8 via an ECU-8S), one outstation connected, 15 outstations calling in)

Line specification	
Max. number of lines	4 on ECU-4 controller; 8 on ECU-8 or ECU-8NT controller; 16 on ECU-16 controller
Number of outstations per line	1 (all lines are monitored for open and short circuit faults)
Outstation cabling requirements	2 core 1mm² or 1.5mm² enhanced fire rated cable, up to 1km per line. Max cable resistance = 40 ohms

Output ratings	
OP1, OP2, OP3 open collector outputs	24 V, 50 mA max
Change-over relay	30 V, 1 A max
24 V output	200 mA max

Indicators, controls and physical appearance	
External indicators	LCD display, Disablement, System fault, PSU fault, General fault, Power On
External controls	Handset (ECU-4, 8 & 16 only), Scroll up, Scroll down, Hold, Call/Accept, Function, Directory, Silence Buzzer
Internal controls	Engineer mode button, Reset button
Dimensions / weight	W 412 x H 250 x D 80mm (base); W 435 x H 269 x D 11mm (lid); 3.1kg
Physical appearance	Lid and base RAL7305 (Grey texture), label background Pantone 429C

Network specification	
Max no. of master controllers per network	14 (any mix of ECU-4s, ECU-8s, ECU-16s and ECU-8NTs)
Connection	Via ECU722 network card, one required per networked master If a controller aslo requires an ECU-224 desk controller use an ECU723 interface/network card instead
Network cabling requirements	4 x 2 core 1.5mm² enhanced fire rated cable, up to 1km in length

DESK CONTROLLERS (ECU-224)

Controls & indicators	Handset and control pad featuring 16 buttons, Green LCD
Physical appearance	Red handset and body, Label is Pantone 432C dark grey and Pantone 10CV light grey
Dimensions & Weight	W 305 x H 110 (includes handset) D 235mm; 1.97kg

DISABLED REFUGE (TYPE B) OUTSTATIONS (EVC302GF / EVC302GS / EVC302F / EVC302S)

Input voltage (from controller)	5 VDC in use, 10.7 VDC quiescent;
Current consumption @ 24 VDC	25 mA in use, 3 mA quiescent
Frequency response	250 Hz to 5 kHz ±3 dB (microphone); 250 Hz to 4 kHz ±3 dB (loudspeaker)
Audio output level	0 dB (775 mV) balanced line level
Switch output	Opto-isolated normally open open-collector, max 24 VDC 3 mA
External indicators	Red call in progress LED
Controls	External Push to Call or Answer button (Off Hook); Internal Loudspeaker volume & Engineer's On Hook pins
Physical appearance	Green steel fascia (EVC302GF/GS); Stainless steel fascia (EVC302F/S): Jet black RAL9005 base (all models)
Dimensions & Weight (Flush versionss)	W 175 x H 250 D 55mm (assembled); W 152 x H 228 x D 53mm (back box only); 1.4kg
Dimensions & Weight (Surface versions)	W 175 x H 240 x D 53mm (assembled); 1.4kg

FIRE TELEPHONE (TYPE A) OUTSTATIONS (EVC301RPO / EVC301RLK)

Input voltage (from controller)	5 VDC in use, 10.7 VDC quiescent;
Current consumption @ 24 VDC	25 mA in use, 1 mA quiescent
Frequency response	250 Hz to 5 kHz ±3 dB (microphone); 250 Hz to 4 kHz ±3 dB (earpiece)
Audio output level	0 dB (775 mV) balanced line level
Controls	Lifting telephone handset makes unit Off Hook
EVC301RPO / EVC301RLK Dimension/Weight	W 202 x H 278 x D 1005mm; 3Kg
T-BEZ301 Dimensions/Weight	W 244 x H 320 x D20mm; 0.5kg
Physical appearance	Red RAL3000