Comsec Protection Systems

SigTEL

1 to 64 line emergency voice communication system

cost-effective
4 LINE MASTER CONTROLLER
and optional
PC Programming Configurator
NOW AVAILABLE !

disabled refuge systems
fire telephone systems
stadium marshalling systems

You're safe with C-TEC

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SigTEL

1 to 64 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 the SigTEL emergency voice communication system

- Ideal for all disabled refuge, fire telephone and stadium marshalling applications
- Compact 4 or 8 line wall-mounting master controllers save valuable space in crowded control rooms
- 8 line expansion unit allows a 4 or 8 line master controller to be easily expanded to 12 or 16 lines
- Powerful networking facility allows up to four master controllers (plus any expansion units) to be interlinked allowing systems of up to 64 lines to be easily implemented
- 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
- Can be easily interfaced to many disabled persons toilet alarm systems, audio-frequency induction loop systems, strobes, beacons or CCTV activation relays
- Ideal for hotels, shopping malls, office blocks, transport terminals, banks, sports stadiums, entertainment complexes, etc.

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SigTEL Controllers

SigTEL comprises a range of low-cost wall-mounting Controllers which can handle 4 or 8 lines (dependent on the model purchased). 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'. For larger systems, an 8 line expansion unit allows systems of up to 12 or 16 lines to be easily implemented. An optional network communication card can be used to interlink up to four Master Controllers for systems of up to 64 lines.

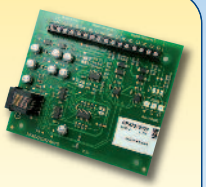
SigTEL Master Controllers (ECU-4 / ECU-8)

- 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
- Supplied with a backlit LCD and handset
- Requires 2 x 12V 7.0 Ah batteries
- Can be semi-flush mounted using the AFP385 bezel
- Optional tamper-resistant cabinets also available

SigTEL 8 Line Expansion Unit (ECU-8S)

- Can be connected to an ECU-4 or ECU-8 master controller to increase its line capacity to 12 or 16 lines respectively
- Does not require a separate mains supply or batteries
- Can be semi-flush mounted using the AFP385 bezel

Network Communication Card (ECU721)



- Allows the interconnection of up to 4 master controllers over a 1KM network
- One card required per networked master controller
- Allows systems of up to 64 lines (four ECU-8 masters each with an ECU-8S slave) to be easily set-up
- Any ECU-4 or ECU-8 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, Master Controllers without handsets are available (ECU-8NT)

Anti-tamper Stainless Steel Enclosure (BF359/3D)

controller not included

- An attractive flush-mounting tamper-resistant cabinet for housing an ECU-4 or ECU-8 master controller
- Helps ensure controllers remain operational at all times by reducing the risk of vandalism
- Two lock kits also available - a CAM lock kit (BF359/3CL) and an electromagnetic solenoid kit (BF359/3SL)
- Surface mounting grey steel enclosures (BF359/2) also available - call our sales desk for details

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 a SigTEL ECU-4 or ECU-8 Controller (or 8 line expansion unit) using two cores of 1.5mm² 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 disabled 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 disabled toilet alarm systems

Weather resistant Endosure for Type B outstations (BF359G/1)

- An IP65 rated weather resistant enclosure designed for use with our Type B **flush** disabled refuge outstations
- Allows an IP65 rated Type B disabled refuge outstation to be created for use in external areas such as car parks, etc.

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 accessories specifically designed for use with SigTEL. The range incorporates 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), an audio-frequency induction loop system (to assist the hard of hearing) and a disabled persons toilet alarm system (to allow communication to take place in accessible toilet areas).

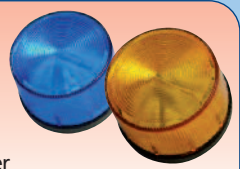
EVC423 Programming Configurator

- 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

FITT Line Tester

- A must-have commissioning tool
- Allows cable faults to be checked and cleared prior to equipment connection
- Supplied with a 9V PP3 alkaline battery
- Includes all of the test cables and connectors you need

XSB / XSA Xenon Strobes



- Can be interfaced to a Type A or Type B outstation to provide visual indication of incoming calls
- Amber (XSA) and Blue (XSB) versions available
- Each strobe requires an SDM Driver Module (see right) & 12V 1A PSU

SDM Driver Module

- Designed to connect across an outstation's line to sense when it is ringing and activate an XSA or XSB strobe
- Can switch up to 1A
- Requires an external 12V 1A PSU

NC951 Disabled Persons Toilet Alarm Kit

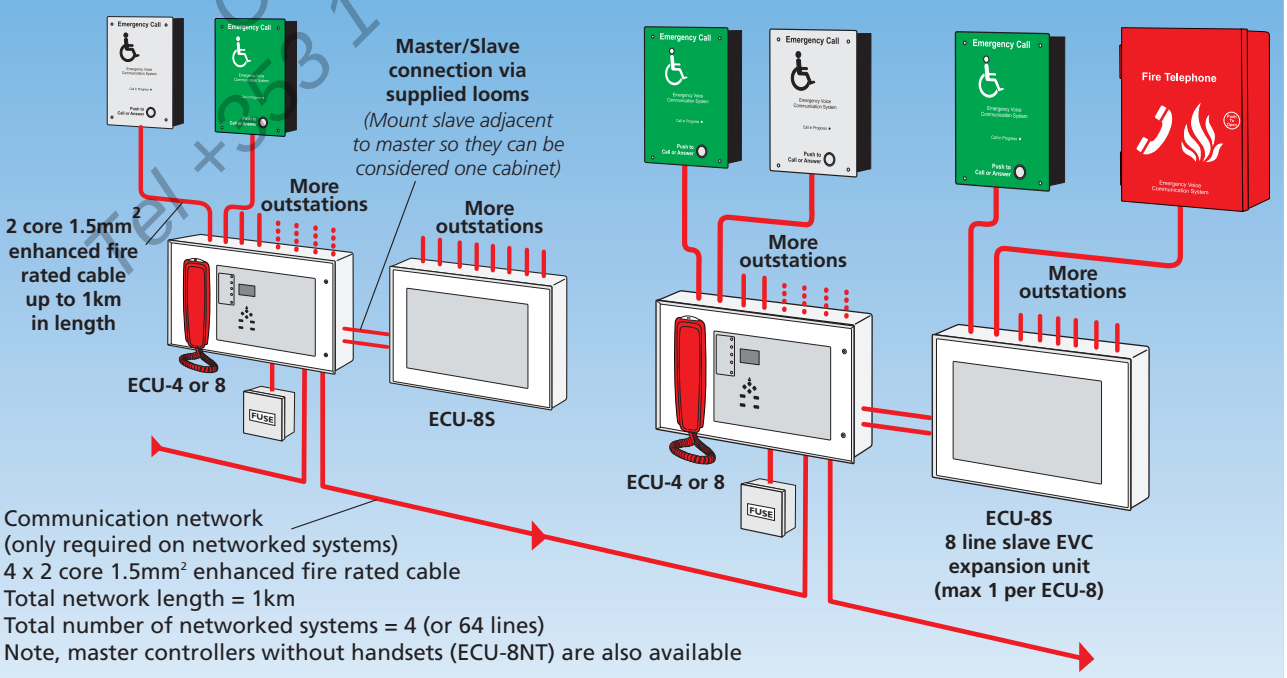
- Includes everything required for a BS8300 compliant emergency assistance alarm
- Easily interfaced to a SigTEL master controller or Type B outstation via its volt-free relay contacts

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.

ML1/K1 Audio-Frequency Induction Loop Kit

- A cost-effective induction 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

SigTEL Wiring Overview



Communication network
(only required on networked systems)
4 x 2 core 1.5mm² enhanced fire rated cable
Total network length = 1km
Total number of networked systems = 4 (or 64 lines)
Note, master controllers without handsets (ECU-8NT) are also available

Comsec Protection Systems

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

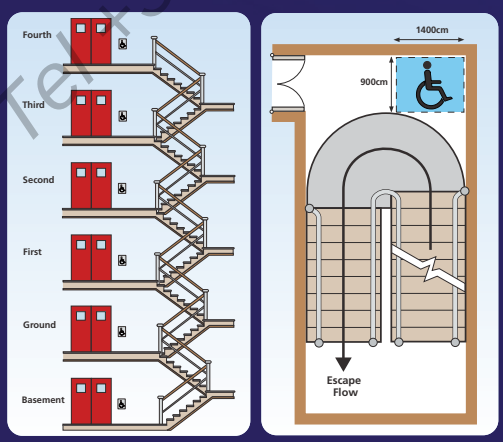
- Equality Act 2010 (supersedes the Disability Discrimination Act)
- UN Convention on the rights of people with disabilities

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?

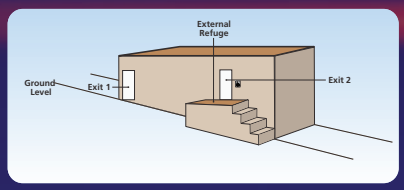
Refuge areas are called for in all non-domestic buildings with more than one storey and they should be provided at each storey exit (i.e. each protected stairway affording egress).

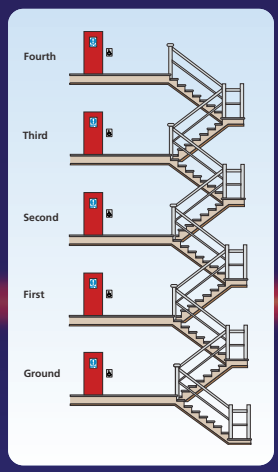


Examples of a Type B outstation installed in the protected stairway providing egress from each storey

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.

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).

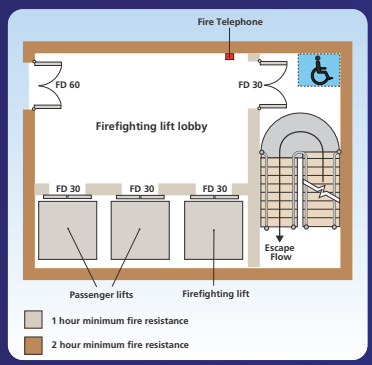
Note that refuges are intended for temporary use only (a few minutes) whilst building management are sending trained staff to deal with the evacuation and should not be confused with "places of relative safety".

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 Emergency Voice Communication System Technical Specifications

MASTER CONTROLLERS (ECU-4 / ECU-8 / 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 (ECU-4 version)	4 (expandable to 12 using ECU-8S expansion unit)
Max. number of lines (ECU-8 / ECU-8NT versions)	8 (expandable to 16 using ECU-8S expansion unit)
Number of outstations per line	1
Lines monitored for open and short circuit faults	Yes
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 & ECU-8 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	4 (any mix of ECU-4s, ECU-8s or ECU-8NTs)
Connection	Via ECU721 network communication card, one required per networked master
Network cabling requirements	4 x 2 core 1.5mm² enhanced fire rated cable, up to 1km in length
Optional BF359/3D stainless steel enclosure	Dimensions: W 725 x H 448 x D 193mm
Optional BF359/2 grey steel enclosure	Dimensions: W 603 x H 465 x D 200mm

EXPANSION UNITS (ECU-8S)

Mains supply and standby battery requirements	Not applicable (power derived from ECU-4, ECU-8 or ECU-8NT master controller)
Cabling requirements (from ECU-4, ECU-8 or ECU-8NT)	2 x CAT 5 patch leads (supplied). These must be protected to BS5839 standards by joining the two cabinets with a short length of 25mm steel conduit (45 to 60mm in length) and passing the cables through
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

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
Optional BF359G/1 weather resistant enclosure	Dimensions: W 215 (does not include 15mm "opening tag") x H 284 x D 75mm approx.

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

Manufactured by C-TEC, Stephens Way, Wigan, WN3 6PH. England

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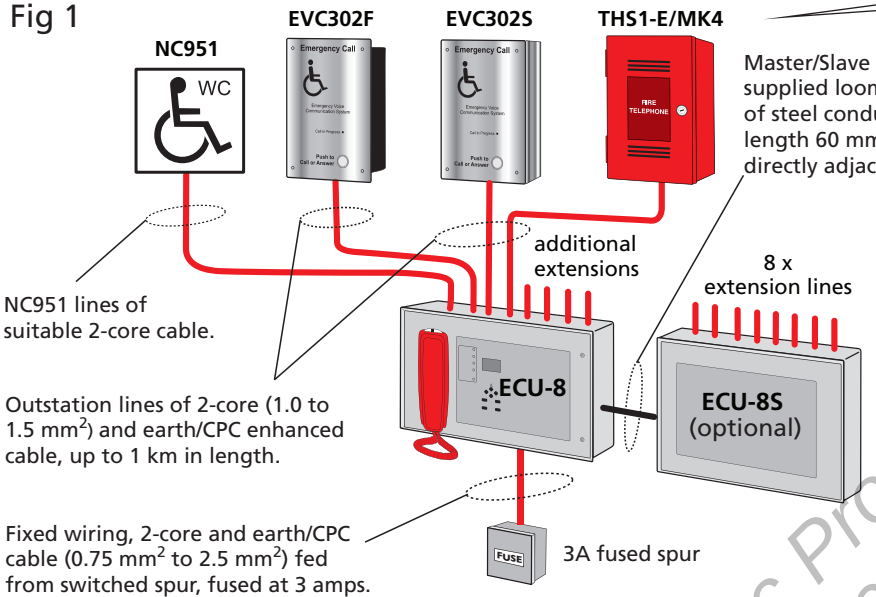
Quality System Certificate No: 176
Assessed to ISO9001 : 2000

SigTEL (1-16 Line) EVCS - Quick Start Installation Guide

THIS GUIDE IS FOR EXPERIENCED INSTALLERS ONLY and summarises key information provided in the full manual (Document No. DAU0000081). Page numbers, e.g. Pg11 refer to the full manual. Networked systems are not included in this guide.

SigTEL EVCS Wiring Overview

Fig 1



SigTEL EVCS Components

Part No.	Description
ECU-8	8-line Master EVC Control Unit c/w line cards, handset and LCD
ECU-8S	8-line Slave EVC Expansion Unit (expands ECU-8 to 16 lines)
EVC302F	Disabled Refuge (Type B) Outstation, handsfree, duplex, flush mounted
EVC302S	Disabled Refuge (Type B) Outstation, handsfree, duplex, surface mounted
THS1-E/MK4	Fire Telephone (Type A) Outstation c/w red steel case, handset & key
THS1-ET/MK4	Fire Telephone (Type A) Outstation c/w red steel case, handset & T-Bar
BF359/1	Weatherproof enclosure for EVC302F
BF359/3D	Stainless steel enclosure for ECU-8
NC951	Disabled Persons Toilet Alarm (DPTA)
FITT	EVC Telephone Line Tester
BC286/2	24 V, 7 Ah battery used with ECU-8
AFP385	Grey flush bezel for ECU-8 or ECU-8S
T-BEZ	Red flush bezel for THS1-E/MK4 and THS1-ET/MK4

Install the EVCS

Location Pg11

Site all equipment indoors in well-lit areas, free from obstruction. If background noise exceeds 40 dB, use an acoustic hood. Site control unit(s) in the control room or lobby, 1.4 metre above final floor level (FFL). Fit Type A (fire telephone) outstations in fire fighting lobbies and fire access points, 1.3 to 1.4 metres above FFL. Fit type B (disabled refuge) outstations in disabled refuges, 0.9 to 1.0 metre above FFL.

Mounting Pg12

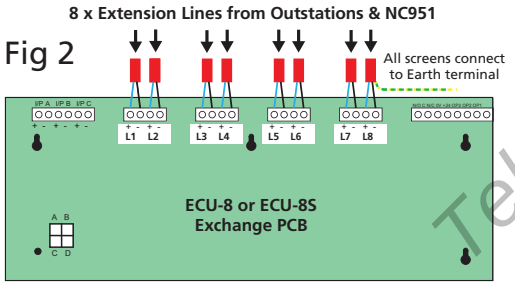
Remove base PCBs before first fix installation to protect them and expose the base mounting holes. Wall mount the control units, either surface or semi-flush. Fix the base securely onto a wall using No.8 round-head, or countersunk screws. If an optional ECU-8S is fitted make the interconnections to the ECU-8 using supplied looms and short length of steel conduit (25 mm OD, max. length 60 mm).

After mounting, remove any dust/swarf and re-install base PCBs. Ensure all connecting looms are refitted correctly; ECU-8 internal connections are B to B, C to C. ECU-8 to ECU-8S (optional) is A to A, D to B.

Wiring and Cable Entry Pg7

See Fig 1 above for cable types. Install all wiring in accordance with the current edition of the IEE Wiring Regs (BS 7671), or relevant national standards. Use enhanced fire-rated cables from control equipment to outstations and suitable 2-core cable to NC951 system.

Fig 2



Test Extension Lines Pg19

Test all lines for faults before terminating extension lines to the ECU-8/ECU-8S. In addition, test outstation lines using a FITT telephone line tester (see component list above).

CAUTION: DO NOT use an Insulation Resistance Tester (Megger) with any devices connected as they will be destroyed.

Fit Outstations & NC951 Interface Pg18

See Fig 1 above for cable types. Max. recommended cable distance to outstations is 1 km, beyond which audio quality may degrade. For wiring and connection details refer to Type A outstation instructions (Doc. No. DAU0000001) and Type B outstation instructions (Doc. No. DAU0302000).

Connect Extension Lines to the Control Equipment Pg19

Do not connect extension lines to the ECU-8, or optional ECU-8S, until they have been tested, fault-free and suitable cable glands fitted. Connect extension lines directly to the Exchange PCB (see Fig 2 left). Connect screens to the earth terminal in the back of the enclosure.

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Connecting Mains Pg17 and Batteries Pg23

See Fig 1 overleaf for mains cable type. Connect a suitable 230 Vac supply to the ECU-8 via the base knockouts. Terminate the mains cable at the Power Supply PCB (plug P2) and NOT to main earth chassis (see Fig 3 right).

For the emergency standby power supply, only use good quality, sealed VRLA batteries. Position and connect two 12 V, 7 Ah batteries to the ECU-8 using the supplied battery connection leads (see Fig 4 far right).

Fig 3

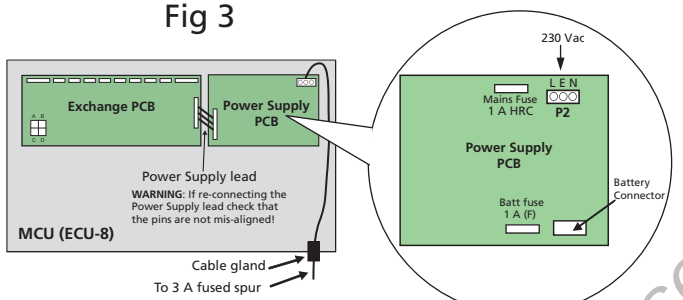
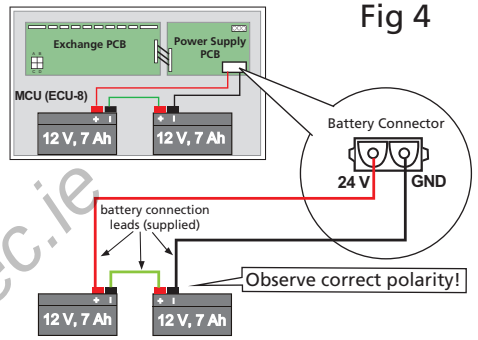


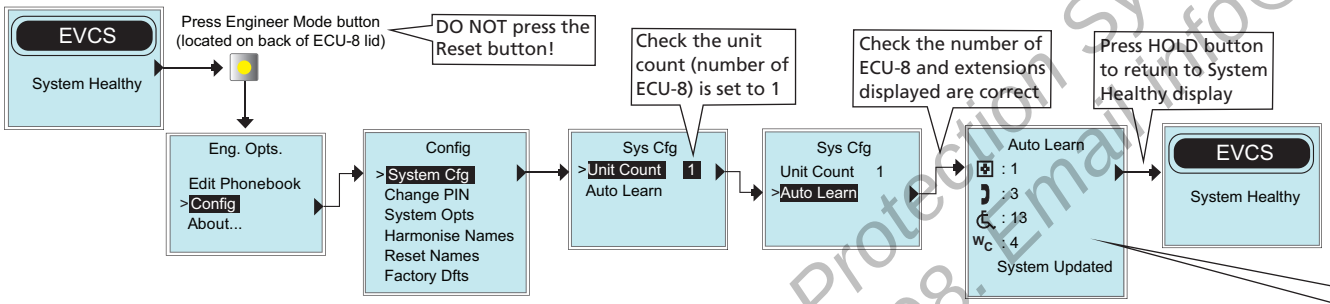
Fig 4



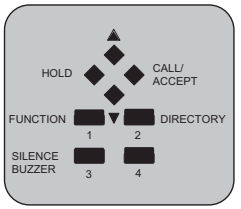
Commission the EVCS

Before commissioning the system ensure that all equipment is fully installed, connected and wiring tested. Check all handsets are on-hook, toilet alarms are cleared/reset and the ECU-8 shows 'System Healthy' status at its LCD display. Configure the system by following the flow chart below.

Configure the system Pg24



Using the ECU-8 keypad



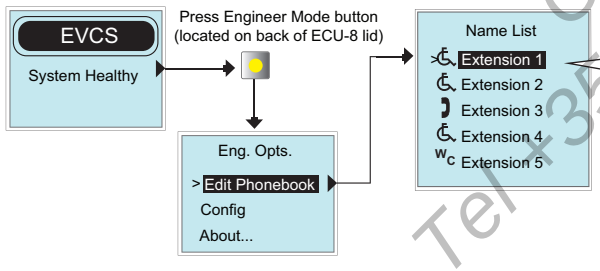
▲	= SCROLL UP
▼	= SCROLL DOWN
CALL/ACCEPT	= MAKE/ACCEPT CALLS & SELECT MENUS
HOLD	= BACK TO PREVIOUS DISPLAY & LAMP TEST
FUNCTION (1)	= EDIT EXT. NAMES & PIN CODE ENTRY
DIRECTORY (2)	= SAVE CHANGES & PIN CODE ENTRY
SILENCE (3) BUZZER	= SILENCE BUZZER & PIN CODE ENTRY
(4)	= CANCEL EDIT EXT. NAMES & PIN CODE ENTRY

What the symbols mean

- No. ECU-8 units (should be set to 1)
- No. Type A (fire telephone) outstations
- No. Type B (disabled refuge) outstations
- W_C - No. Disabled persons toilet alarms (DPTA)

Check audio quality and interactively name extensions Pg27

At the ECU-8, with the handset on-hook select the 'Edit Phonebook' option by following the flow chart below. With an operator at the ECU-8, go to each outstation in turn and make a call. At the ECU-8 lift the handset and press the ACCEPT button. The outstation's channel is opened for speech and automatically selected for editing. Check audio quality of the line and inform the operator at the ECU-8 your position. They can edit the outstation name directly (see Naming Extensions below). Repeat this process for all remaining outstations but to avoid confusion only call in from one outstation at a time. Outstations can also be manually named if you are sure of its location.



Naming Exensions

Select 'Edit Phonebook' option.

▲ and ▼ - highlights extension
ACCEPT - selects 1st character
▲ and ▼ - changes character
ACCEPT - moves to next character
HOLD - moves to previous character & exits
DIRECTORY - saves changes

Additional System Set up Features

Add/Remove Outstations & DPTA Pg27
Change Security PIN Code Pg29
Set up Latch Faults Pg30
Clear Recent Calls Pg31
Set up Auto-Answer Pg31

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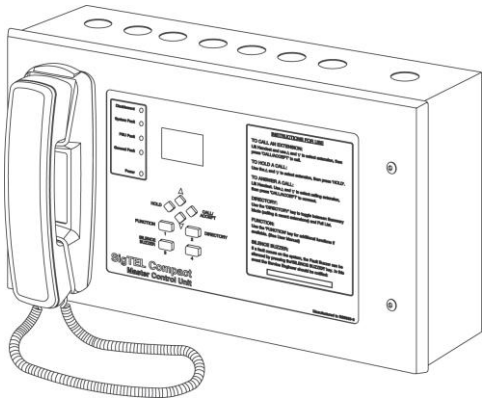
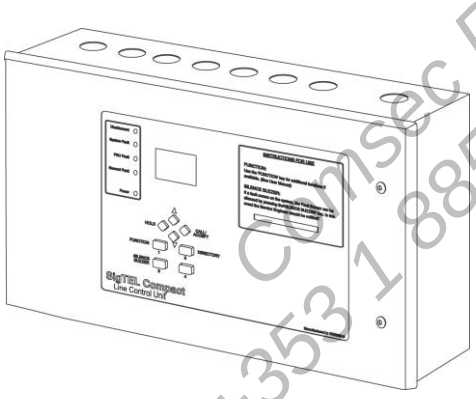
SigTEL Compact

Emergency Voice Communication System (EVCS)





Installation and Configuration Manual

Approved Document No. DAU0000081 Rev 4

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AN EXPLANTION OF TERMS AND DEFINITIONS USED IN THESE INSTRUCTIONS IS LISTED IN SECTION 22.

Contents

1 Important Notes

READ THIS SECTION BEFORE INSTALLING/MAINTAINING THIS PRODUCT

CAUTION

This equipment must only be installed and maintained by a suitably skilled and technically competent person. No responsibility can be accepted by the manufacturer, or distributors of this product for any misinterpretation of an instruction, or guidance note, or for the compliance of the system as a whole.

About this guide

This guide explains how to install, commission and maintain a SigTEL EVCS disabled refuge and fire telephone system. A separate user manual (ref. DAU0000082) includes detailed operational information, some of which will need to be referred to by the installation engineer when setting up the system.

No responsibility can be accepted by the manufacturer, or distributors for any misinterpretation of these instructions, or for the compliance of the system as a whole.

This installation guide must not be accessible to the user.

System design

EVCS design is beyond the scope of this document. An understanding of system components and their use is assumed.

We recommend that you read BS 5839 Part 9 (available in libraries or from the BSI, www.bsonline.bsi-global.com) for this information. Contact the building control, or fire officer in case he has any special requirements.

Equipment guarantee

This equipment is not guaranteed unless the system is installed and commissioned in accordance with national standards by an approved and competent person, or organisation.

General precautions

Do not test wiring with an insulation tester (Megger) with any equipment connected as the 500 volt test will destroy these devices totally. You must observe local wiring regulations.

Do not run SELV and LV cables in the same enclosure without adequate insulation between them.

SigTEL EVCS control equipment is designed to be installed indoors. Outstations are not IP rated so should not be installed outdoors unless an IP65, or better housing, is used and cables are installed so as to prevent the ingress of moisture.

Anti-static handling guidelines

Make sure that electro-static handling precautions are taken immediately before handling PCBs and other static sensitive components. Before handling any static-sensitive items, Operators should get rid of any electrostatic charge by touching a sound safety earth.

Always handle PCBs by their sides and avoid touching any components. PCBs should be stored in a clean, dry place that is free from vibration, dust and excessive heat. Storing the PCBs in a suitable cardboard box will also guard them against mechanical damage.

2 Regulations Affecting EVCS

Disabled refuge systems are called for by DETR Approved document B (Fire safety) volume 2, section 4, Design for vertical escape and BS 5588 Fire precautions in the design, construction and use of buildings, Part 8, Code of practice for means of escape for disabled people.

Fire telephone systems for buildings are called for by BS 5588 Fire precautions in the design, construction and use of buildings Part 5, Code of practice for firefighting stairs and lifts, Part 10, Code of practice for shopping complexes and Part 11, Code of practice for shops, offices, industrial, storage and other similar buildings.

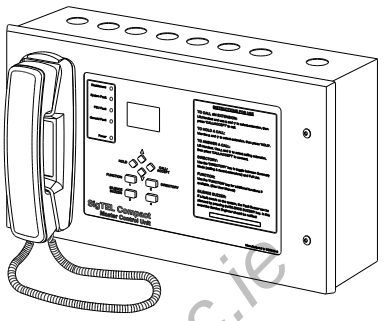
Fire telephone systems for sports venues are called for by the Guide to safety at sports grounds.

The installation of EVCS's is covered by BS 5839-9 Fire detection and fire alarm systems for buildings – Part 9: Code of practice for the design, installation, commissioning and maintenance of emergency voice communication systems.

3 SigTEL Compact Components

Note: See Specification (section 19) for component details.

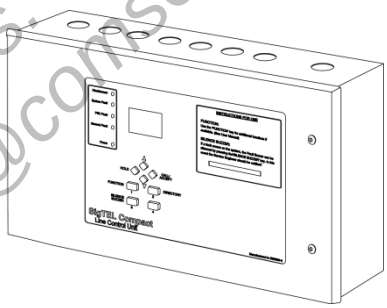
3.1 MCU (part no. ECU-8)



The master control unit (MCU) allows the Operator to communicate with the outstations. Eight extension lines may be connected directly to the MCU and one Expansion Unit can be added to allow connection of up to a further eight extension lines.

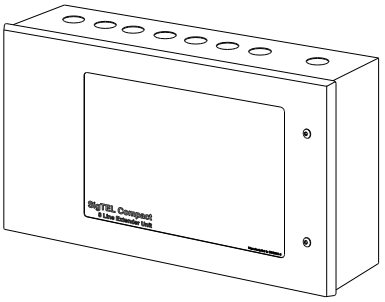
Note: Up to four MCU can be connected on a network by installing a Network Communications Card (ECU721) in each unit.

3.2 LCU (part no. ECU-8NT)



The line control unit (LCU) is identical to an MCU but does not have a handset mounted on its front panel.

3.3 Expansion unit (part no. ECU-8S)

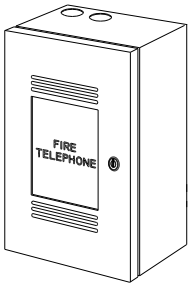


This unit has 8 extension lines and extends the number of extension lines that can be connected to a controller (MCU or LCU). It must be fitted next to a controller.

3.4 Grey flush bezel (part no. AFP385)

This flush bezel is used with the MCU, LCU or Expansion Unit and provides a neat finish when an enclosure is semi-recessed (up to 60 mm).

3.5 Type A fire telephone outstation with key lock (part no. THS1-E/MK4)



One Type A outstation is connected to one extension line so that the control room can call out to specific locations and also know which location is calling in.

The housing has openings to allow the ringing to be heard, a fire retardant window with the legend 'Fire Telephone' and may be surface mounted, or semi-recessed.

The THS1-E, has a wall mounted key lockable, red steel cabinet with all keys to pass (identical).

3.6 Type A fire telephone outstation with T-Bar handle (part no. THS1-ET/MK4)

The THS1-ET has a non-locking T-Bar handle instead of a key lock.

3.7 Flush-mounting bezel (part no. T-BEZ)

This red flush bezel provides a neat finish when the THS1-E/MK4 or THS1-ET/MK4 is semi-recessed.

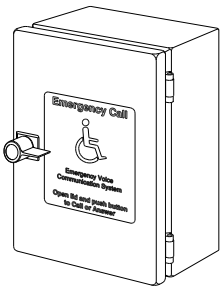
3.8 Type B disabled refuge outstation surface mounting (part no. EVC302S)

One Type B outstation is connected to one extension line so that the control room can call out to specific locations and also know which location is calling in. Hands-free, duplex operation is employed. The EVC302S has a stainless steel front plate with 'Push to Call or Answer' button, Call in Progress LED, a buzzer and apertures for a microphone and loudspeaker.

3.9 Type B disabled refuge outstation flush mounting (part no. EVC302F)

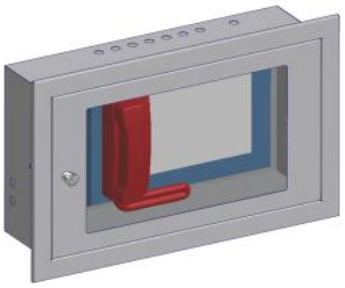
Similar to the EVC302S version but with a flat front plate suitable for flush installation. Hands-free, duplex operation is employed. An IP66 rated housing, BF359/1, is available to allow the EVC302F to be used outdoors. Note: The flush version is shown right.

3.10 Type B outstation enclosure (part no. BF359/1)



This enclosure is used to protect an EVC302F outstation when used at an external disabled refuge. It is supplied with a non-locking handle as disabled refuge points should not normally be locked and is IP66.

3.11 Type B outstation enclosure (part no. BF359/3D)

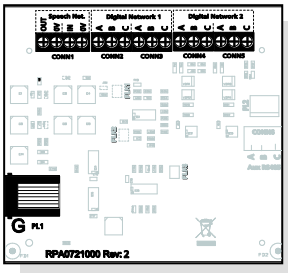


This is a stainless steel, deep enclosure used to house an MCU. It is supplied with two optional locking kits; CL (camlock) or SL (solenoid).

3.12 Disabled persons toilet alarm (part no. NC951)

The EVCS is able to interface with a disabled persons toilet alarm (DPTA) system. This is a secondary function to the primary purpose of the EVCS. If the site has toilet alarms AND they are connected into the EVCS, then active toilet alarms will be displayed at the MCU. As toilet alarm monitoring is a secondary function, any activated toilet alarms will be suppressed from being displayed if there are any calls from/to the outstations. At the end of outstation calls, the activated toilet alarms will be displayed.

3.13 Network communications card (part no. ECU721)



The ECU721 Network Communications Card enables up to four MCU or LCU to be connected on a communication network, up to 1 km in length. Any MCU/LCU connected on the network requires the installation of an ECU721 card. The ECU721 card is mounted inside the control unit and transmits both speech audio and digital data.

3.13.1 Key features of the EVCS networked system:

1. Allows the interconnection of up to four, MCU using 4 x 2-core, 1.5 mm^2, enhanced wiring.
2. Maximum length on the speech wiring loop, or digital linear wiring = 1 km.
3. All MCU monitor both the network wiring and each other for faults (open and short circuits).
4. Fault tolerant network that allows the system to continue working in the event of a single cable break in the speech or digital wiring. Speech audio is transmitted via one wiring loop and digital data via two linear RS485 networks.
5. Each networked MCU can be programmed with the following configuration:
   - One MCU is configured as the 'master' MCU and has control over the system. The other MCU act as repeaters but can take control from the master MCU when a security PIN code is entered, either at the master MCU, or a repeater MCU. For example, control can be transferred from one control point in a building to another to cater for different day/night shift patterns.
   - The master MCU displays the location of calls and the description of faults on the EVCS. Faults on repeater MCU are displayed at the master MCU as a General Fault.
   - Calls from any outstation, regardless of which MCU they are connected to, are automatically routed to the master MCU. Repeater MCU indicate that units are calling the master MCU and can take control of the system by lifting their handsets and entering a security PIN code.
   - Able to take control from the master MCU at any repeater MCU (by entering a security PIN code). For example, the nearest MCU to the building entry point. Also, able to give control from the master MCU to any repeater MCU (by entering a security PIN code).
   - Changes made at the master MCU (e.g. security PIN codes, extension names, addition/removal of an outstation or MCU) are automatically updated on all repeater MCU.
   - The master MCU is automatically dialled to by repeater MCU when their handsets are picked up (no-call mode).

4 Cables

Cables used between EVCS components should be enhanced fire resistant [see 26.2e of BS 5839-1:2002], except for underground sections of cabling at sports and similar venues. See BS 5839-9:2003 section 14 for details.

Interconnection	Cable Type
Extension lines to outstations	2-core is required for each line and they should use 1.0 mm^2 or 1.5 mm^2 enhanced cable. Larger cables will stress the connectors. The maximum cable resistance is 40 ohms, which is 1000 metres of 1.0 mm^2. If this exceeded audio quality will degrade.
Extension lines to DPTA systems (NC951)	Suitable 2-core cable is required for each line.
MCU (ECU-8) to Expansion Unit (ECU-8S)	Connect the MCU to Expansion Unit using two Cat 5 patch cables (supplied with the Expansion Unit). These cables are not fire-resistant and some of the cores are not monitored for faults and so they must be protected to BS 5839 standards by joining the two cabinets with a short length of 25 mm steel conduit (min 45 mm, max 60 mm) and passing the cables through.
Power supplies	The MCU requires fixed wiring using 3-core cable (no less than 0.75 mm^2 and no more than 2.5 mm^2) fed from an isolating un-switched fused spur, fused at 3 amps and must not be connected using a plug and socket.
MCU to MCU – networked system or MCU to LCU – networked system	4 x 2-core, 1.5 mm^2 enhanced cable, up to 1000 metres in length. This cable connects ECU721 cards mounted inside the MCU. **Note**: To provide full network reliability only 2-core cable should only be used. This allows two separate cable paths to be run with each path containing a single speech and data cable (which should not be mixed in the same cable). Therefore, if one cable path's integrity is compromised, because of structural damage, the other cable path's integrity is maintained.
MCU to ECU721 – networked system	Connect the MCU to ECU721 using one Cat 5 patch cable (supplied with the ECU721).

5 Typical Systems

5.1 System up to 8 extension lines

Equipment required

One MCU (ECU-8)

Two 12 volt 7 Ah batteries per MCU

One 3 A fused spur and back box

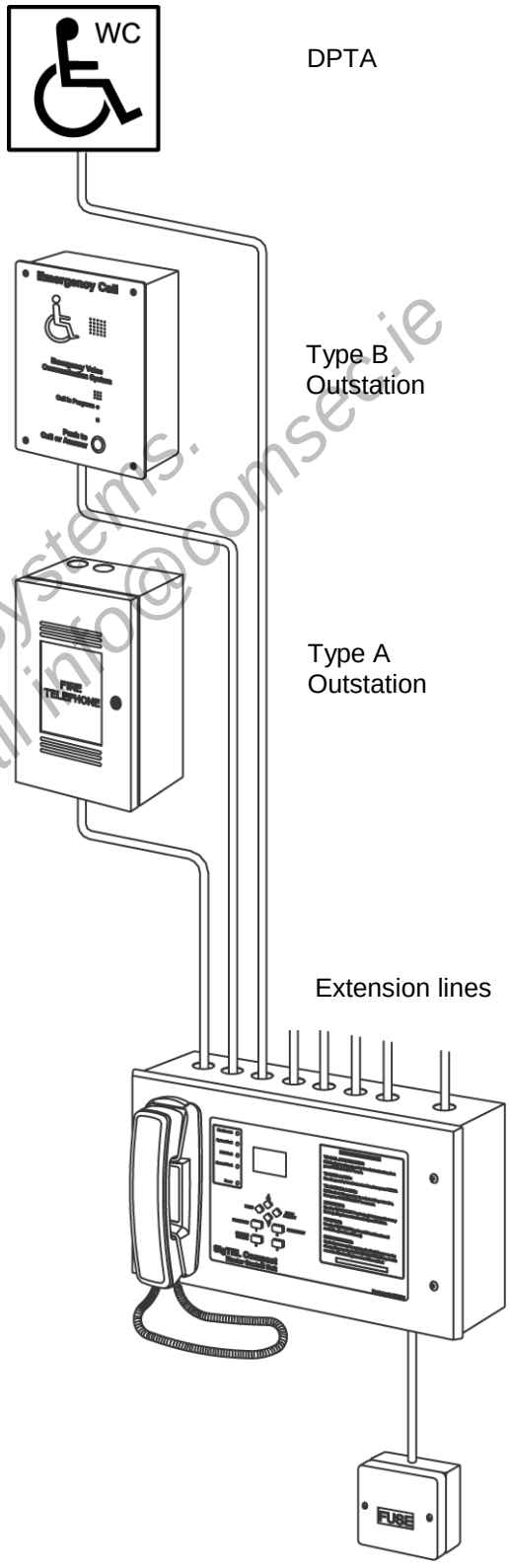
One Type A outstation (THS1-E) or one Type B outstation (EVC302) or one DPTA (NC951) per extension line

One Telephone Line Tester (FiTT)

Interconnections

For each extension line to outstations, up to 1 km of 2-core, 1.5 mm^2 enhanced fire-rated cable.

For each extension line to DPTA (NC951), suitable 2-core cable.



5.2 System up to 16 extension lines

Equipment required

One MCU (ECU-8)

One Expansion Unit (ECU-8S)

Two 12 volt 7 Ah batteries per MCU

One 3 A fused spur and back box

One Type A outstation (THS1-E) or one Type B outstation (EVC302) or one DPTA (NC951) per extension line

One Telephone Line Tester (FiTT)

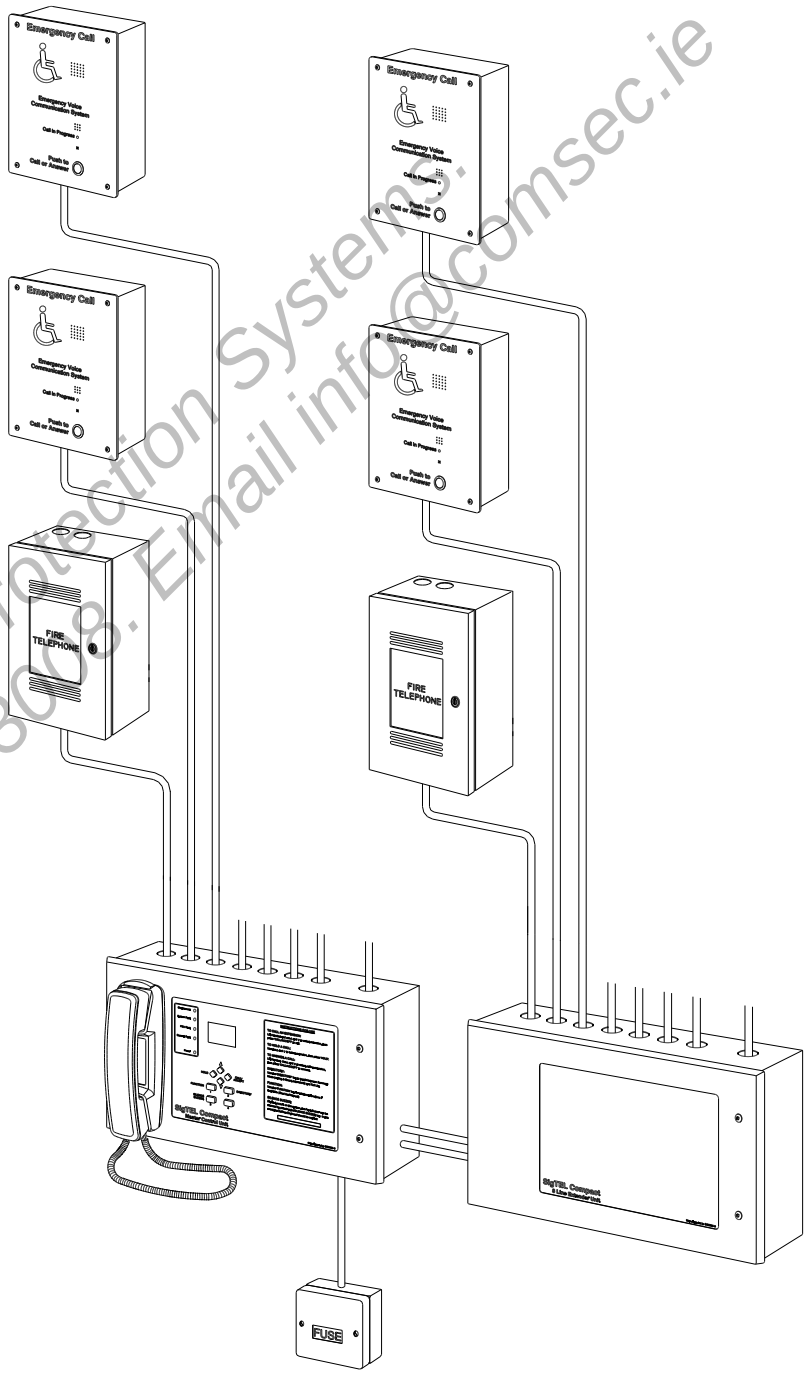
Interconnections

For each extension line to outstations, up to 1 km of 2-core, 1.5 mm^2 enhanced fire-rated cable.

For each extension line to DPTA (NC951), suitable 2-core cable.

Between the MCU and the Expansion Unit, two Cat 5 cables (provided) protected by 25 mm steel conduit.

Minimum distance between the MCU and Expansion Unit so that the doors will open properly is 45 mm and the maximum distance is 60 mm, or the supplied cables will be too short.



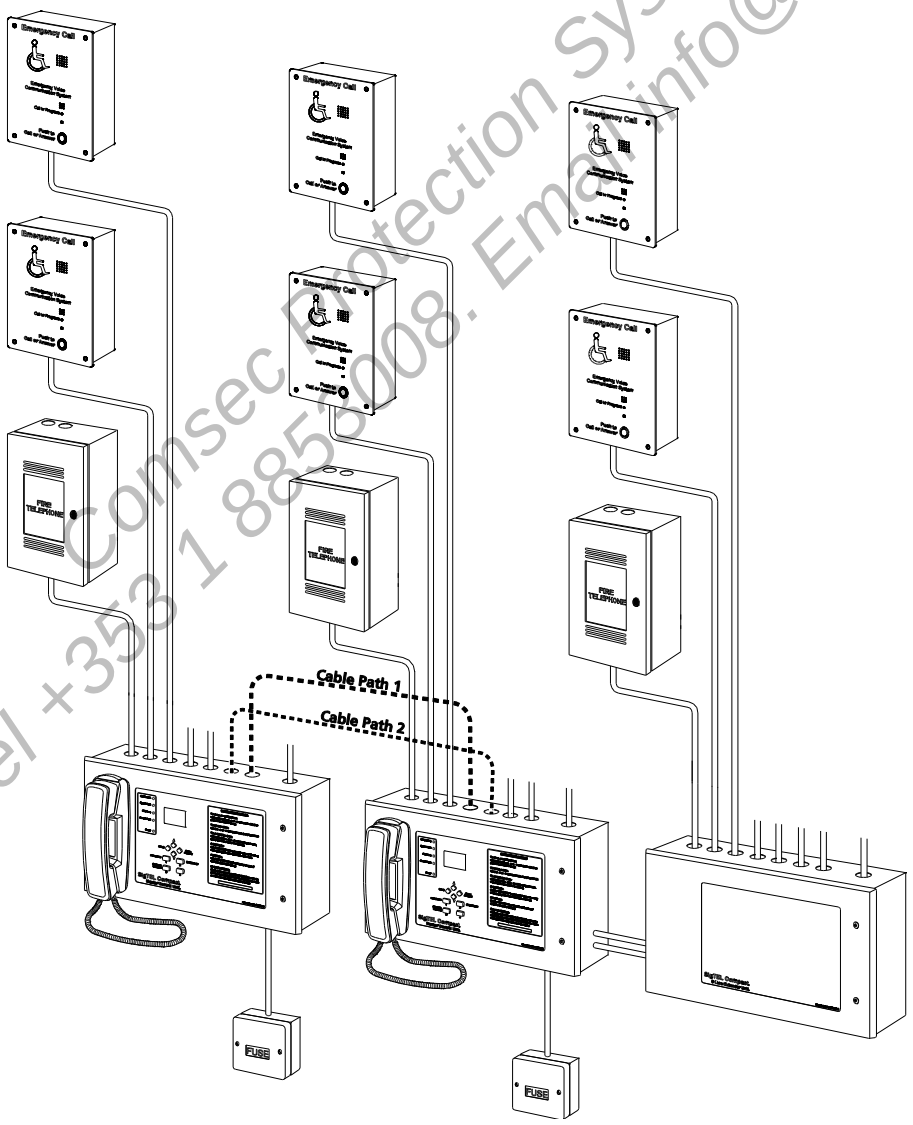
5.3 Networked system up to 64 extension lines

Equipment required

Up to four MCU (ECU-8)
One Expansion Unit (ECU-8S) per MCU (if required)
Two 12 volt 7 Ah batteries per MCU
One 3 A fused spur and back box per MCU
One Type A outstation (THS1-E) or one Type B outstation (EVC302) or one DPTA (NC951) per extension line
One Telephone Line Tester (FiTT) per MCU

Interconnections

For each extension line to outstations, up to 1 km of 2-core, 1.5 mm^2 enhanced fire-rated cable.
For each extension line to DPTA (NC951), suitable 2-core cable.
Between each MCU and Expansion Unit: two Cat 5 cables (provided) protected by 25 mm steel conduit.
Minimum distance between the MCU and Expansion Unit so that the doors will open properly is 45 mm and the maximum distance is 60 mm, or the supplied cables will be too short.
MCU to MCU: 4 x 2-core, 1.5 mm^2, enhanced fire-rated cable. This allows two separate cable paths (Cable Paths 1 & 2) to be run with each path containing a single speech and data cable (which should not be mixed in the same cable). The network wiring is fault-tolerant - see network diagram (section 9).



6 First Fix Installation

6.1 Equipment location

Control equipment

Unless installed in an enclosure of at least IP65 rating, all equipment must be sited indoors and MUST NOT be subjected to conditions likely to affect its performance, such as damp, salt air, water, extreme temperatures, physical abuse, etc.

If an additional enclosure is used for any component, care must be taken to ensure that the functionality of the components is not impaired. For example, all indicators must be visible and necessary tones must be audible at the levels required by BS 5839-9 when the door is closed.

The MCU and Expansion Unit must be wall mounted at an easily accessible height, with the LCD at eye level, typically 1.4 metres above final floor level and should be located in areas of low fire risk, usually in the control room.

Outstations

Type A outstations should be located at entrances and fire fighting lobbies and normally mounted 1.3 m to 1.4 m above final floor level. Type B outstations should be located in disabled refuges at each storey exit and normally mounted 0.9 m to 1.2 m above final floor level.

As far as practicable, outstations should be located where background noise is normally low [preferably not more than 40 dBA]. Where there is a higher level of background noise the installation of an acoustic hood around the outstation might help to reduce the effect of background noise to an acceptable level

Disabled persons toilet alarm (DPTA) System

Refer to the documentation supplied with the DPTA (Part No. NC951).

Outdoor installations

Outstations may be mounted in an IP65, or better box, with an easily opened door. Steps should be taken to ensure that moisture does not enter and damage the electronics and that necessary functionality is not impaired.

Sports stadiums

In sports stadiums, Type A outstations should be located no more than 30 metres from stewards' positions, or other normally manned areas as listed in the Guide to Safety in Sports Grounds. If they are exposed to the elements they should be mounted in an IP65, or better box, with an easily opened door. Steps should be taken to ensure that moisture does not enter and damage the electronics and that necessary functionality is not impaired.

Strobe driver module (part no. SDM)

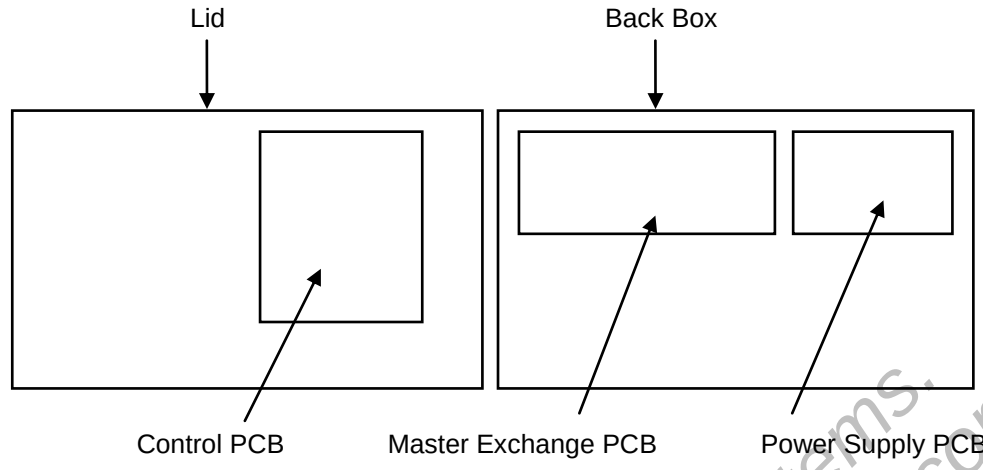
If the ringer is not loud enough a flashing red strobe light and/or sounder may be fitted to any outstation.

A strobe driver module, part number SDM, which can switch up to one amp, should be connected across the line to sense when the outstation rings.

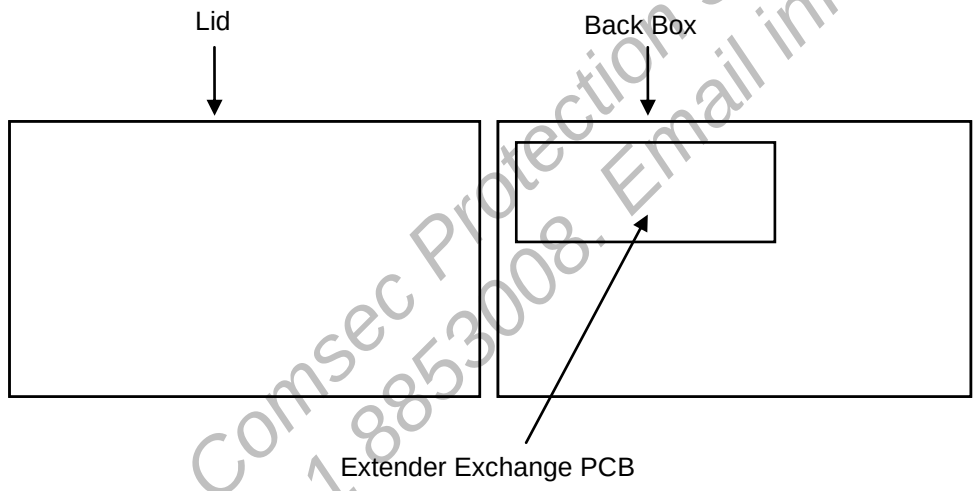
An external 12 VDC EN 54 power supply must be connected to the strobe module to provide power for the module and/or sounder. This may be provided local to the outstation, or centrally, in which case two extra cores will be required and voltage drop should be taken into account.

7 Mounting MCU and Expansion Unit Enclosures

The MCU (ECU-8) and Expansion Unit (ECU-8S) are supplied in a steel back-box with a hinged steel lid and several printed circuit boards (PCBs), as shown below.



MCU



Expansion Unit

The MCU and Expansion Unit can be surface, or semi-flush mounted to allow clearance for front panel opening (max. depth 60 mm including dimples). To expose the base mounting holes and to protect the hinged lid and PCBs from damage during installation, they must first be removed. Before any of the following is carried out ensure that the mains power supply is isolated and the batteries are removed.

7.1 Remove the base PCBs

Disconnect the cable from the PSU to the Exchange PCB and the earth strap from the base to the lid.

Disconnect the earth strap spade connector from the main chassis earth point.

Carefully remove the PCB retaining screw located at the bottom left hand side of the exchange and power supply PCBs.

Push the PCB upwards and then pull forwards over the mounting pillars taking care not to damage any of the components.

7.2 Remove the lid

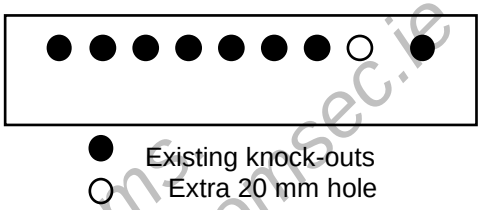
Undo the two screws on the right hand side of the lid using the tool provided.
Hinge the lid fully to the left. Unplug the earth strap and the two RJ45 plugs on the wiring looms. Carefully remove the four M4 retaining nuts that secure the hinges.

The MCU lid and base PCBs should now be removed from site to prevent accidental damage.

Note: All PCBs are static sensitive and anti-static handling precautions MUST be observed when handling them.

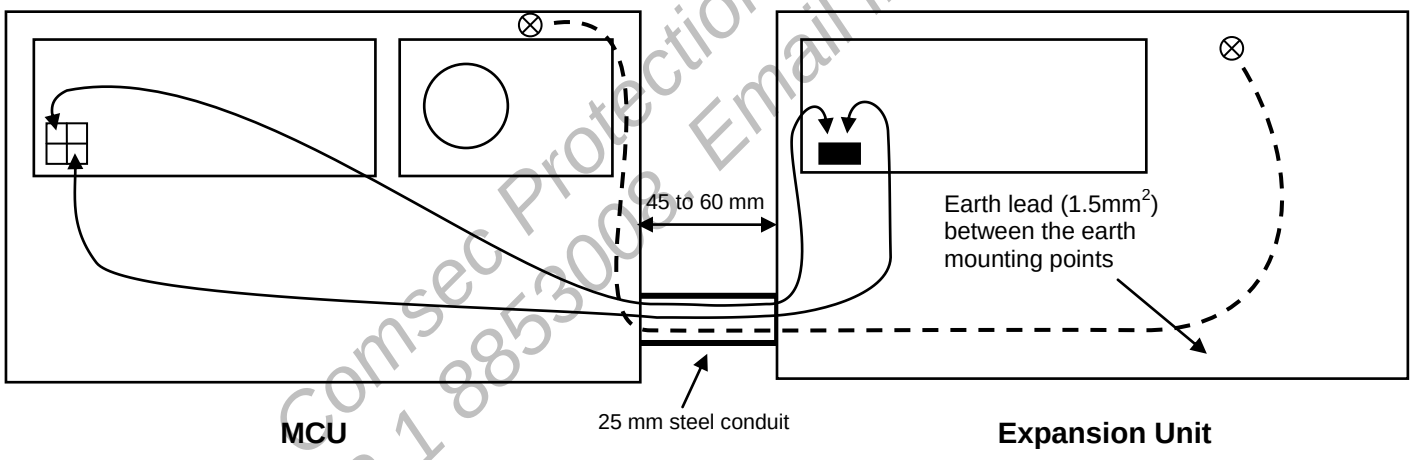
7.3 Remove knockouts & cut gland holes

Mains should normally be brought into the case via a knockout in the bottom right-hand corner. However, if top-entry is required, it should enter through the knockout on the extreme right. Cable segregation must be maintained.
If the MCU is fully populated with extension lines then extra 20 mm holes may be cut in the top, as required.
Note: This must be done before re-installation of circuit boards to avoid swarf getting into the electronics.



7.4 Interconnections

If an Expansion Unit is to be fitted, cut a suitable hole in the side of each box and fit a steel conduit large enough for the two Cat 5 cables (and their plugs) and one earth lead to pass through, as shown below.
Note: This must be done before re-installation of circuit boards to avoid swarf getting into the electronics.

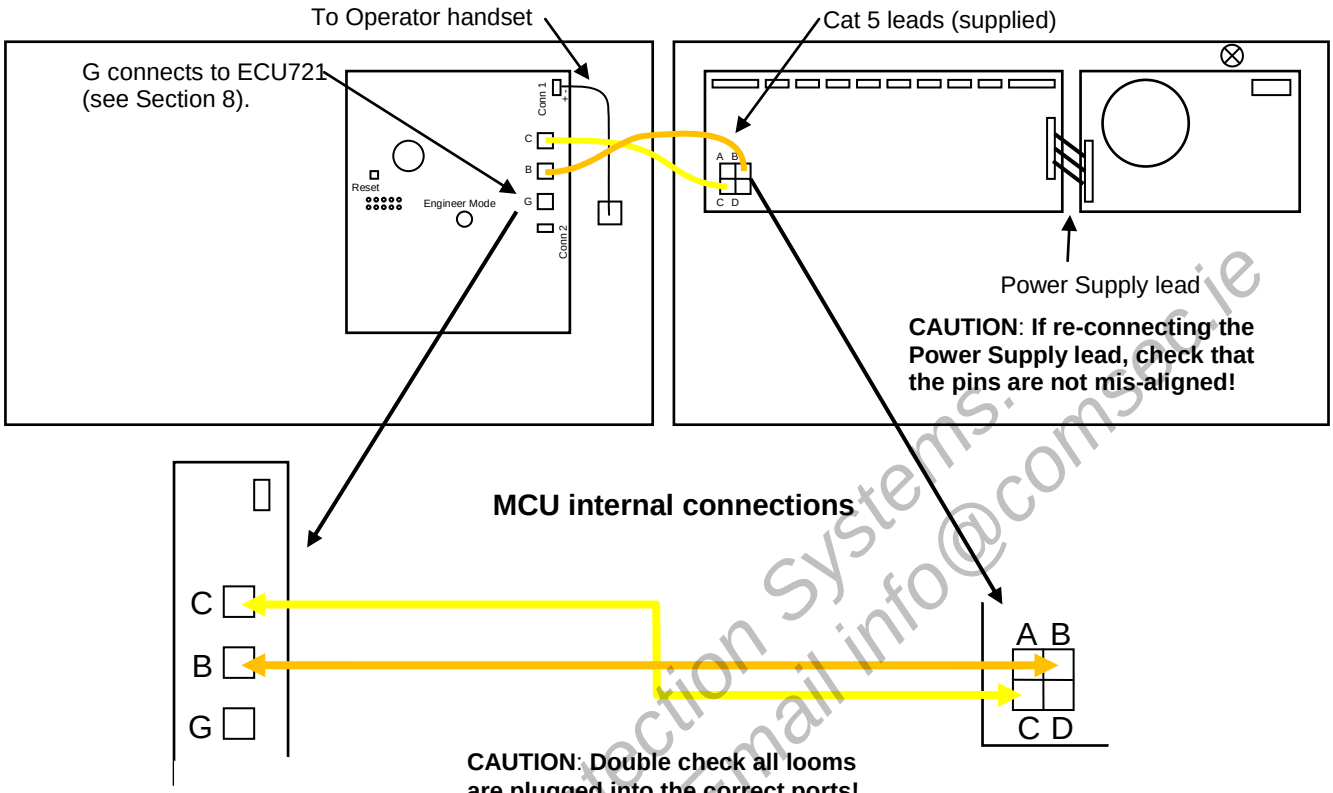


7.5 Fix the base to the wall

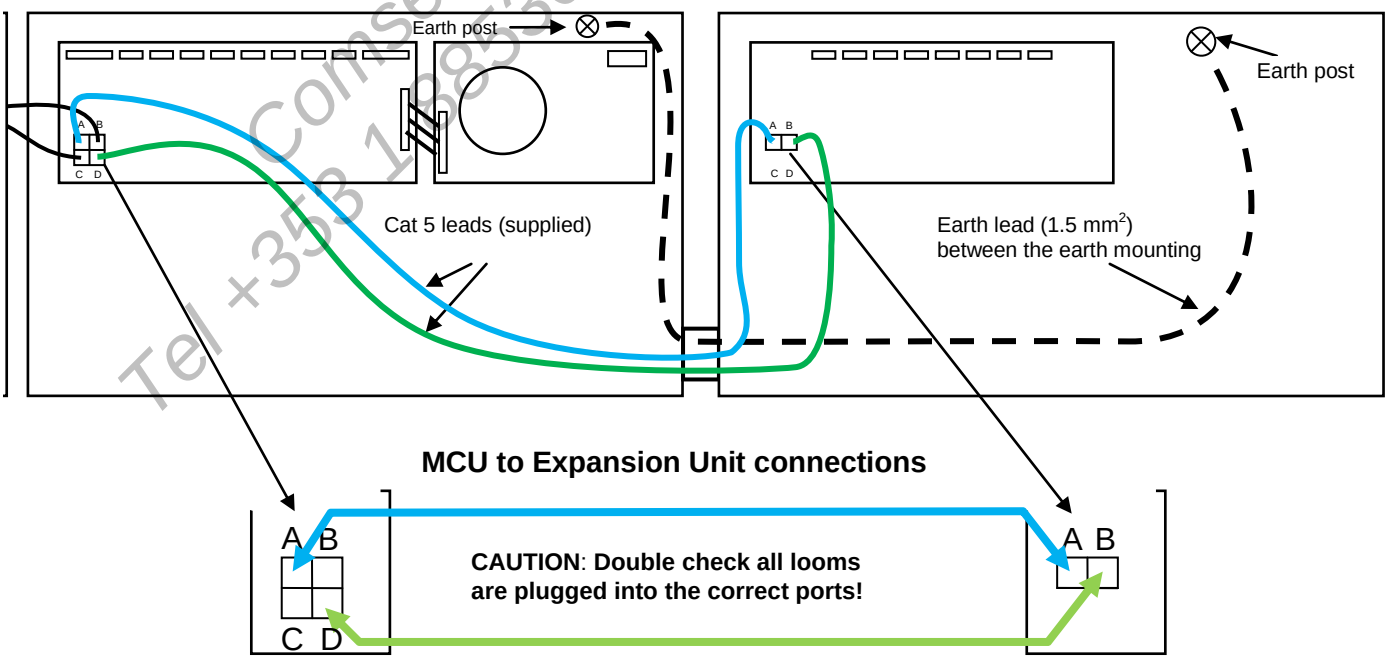
Using the four mounting holes, fix the base securely to the wall using a suitable screw fixing. The mounting holes are designed for No. 8 round-head, or countersunk wood-screws. Any dust, or swarf, must be kept out of the enclosure and great care must be taken not to damage the wiring, or components.

7.6 Re-install the PCBs

Re-install the base PCBs and refit the lid. Ensure the fixing screws and all interconnection cables are refitted correctly, as shown below.



If you are using an Expansion Unit connect it to the MCU as shown below.



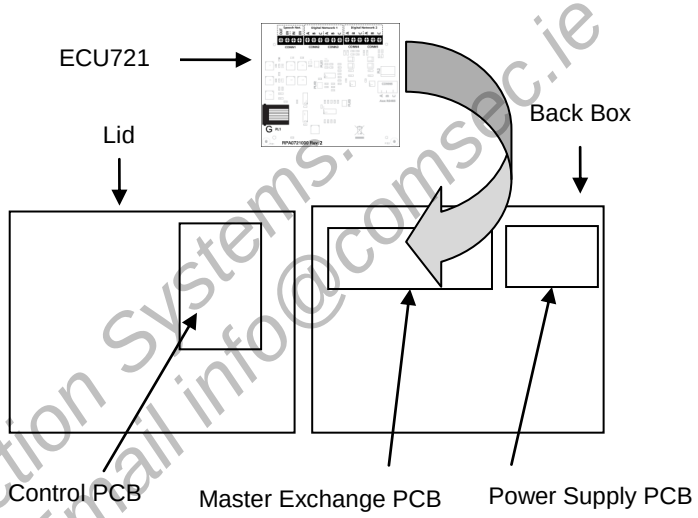
8 Installing the ECU721 Network Comms Card (Optional)

The MCU has a Master Exchange PCB and Power Supply PCB mounted in its base unit and a lid-mounted Control PCB. The ECU721 card has to be mounted on top of the Master Exchange PCB. Before carrying out the steps below, ensure that mains power is isolated and the MCU batteries are disconnected.

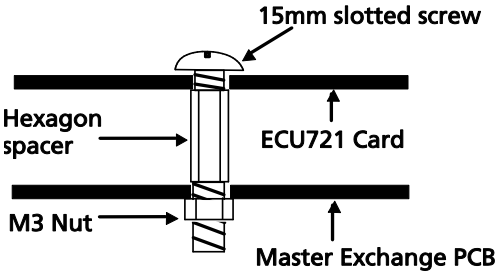
Note: All PCBs are static-sensitive and therefore anti-static handling precautions MUST be observed when handling them.

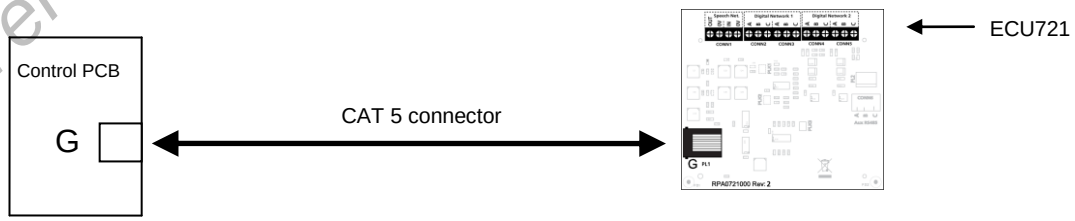
To install an ECU721 card follow the steps below:

1. Open the MCU lid by removing the two retaining lid screws (using an Allen key).
2. Disconnect the 10-way wiring loom between the Master Exchange PCB and the Power Supply PCB. Ensure the loom remains connected to the Power Supply PCB to prevent it being misplaced.
3. Unplug the RJ45 connectors from terminals B&C on the Master Exchange PCB. Ensure these cables remain connected to the Control PCB to prevent them being misplaced. Care should be taken when detaching these connectors to depress the locking tabs to prevent damage.
4. Unfasten the one retaining screw, located bottom left side on the Master Exchange PCB, using a crosshead screwdriver. Carefully slide the Master Exchange PCB up and over its mounting pillars, taking care not to damage any components.
5. Take the ECU721 card and carefully line up its four holes with the holes in the Master Exchange PCB, see right.
6. Insert four M3 x 15 mm slotted screws and hex spacers (supplied) through the front holes in both the ECU721 card and Master Exchange PCB so they protrude through the back of the PCB. Next, secure the ECU721 card and PCB together using four M3 nuts (supplied), see right.
7. Refit the Master Exchange PCB (and mounted ECU721 card) back into the base unit. Ensure the retaining screw on the Master Exchange PCB is firmly fastened down. Reconnect the RJ45 leads and 10-way wiring loom.
8. Connect a 270 mm RJ45 patch lead (supplied) from terminal G on the ECU721 card to terminal G on the lid-mounted Control PCB. See below.



Fitting the ECU721 card





9. When all connections have been correctly made, re-connect power to the MCU.

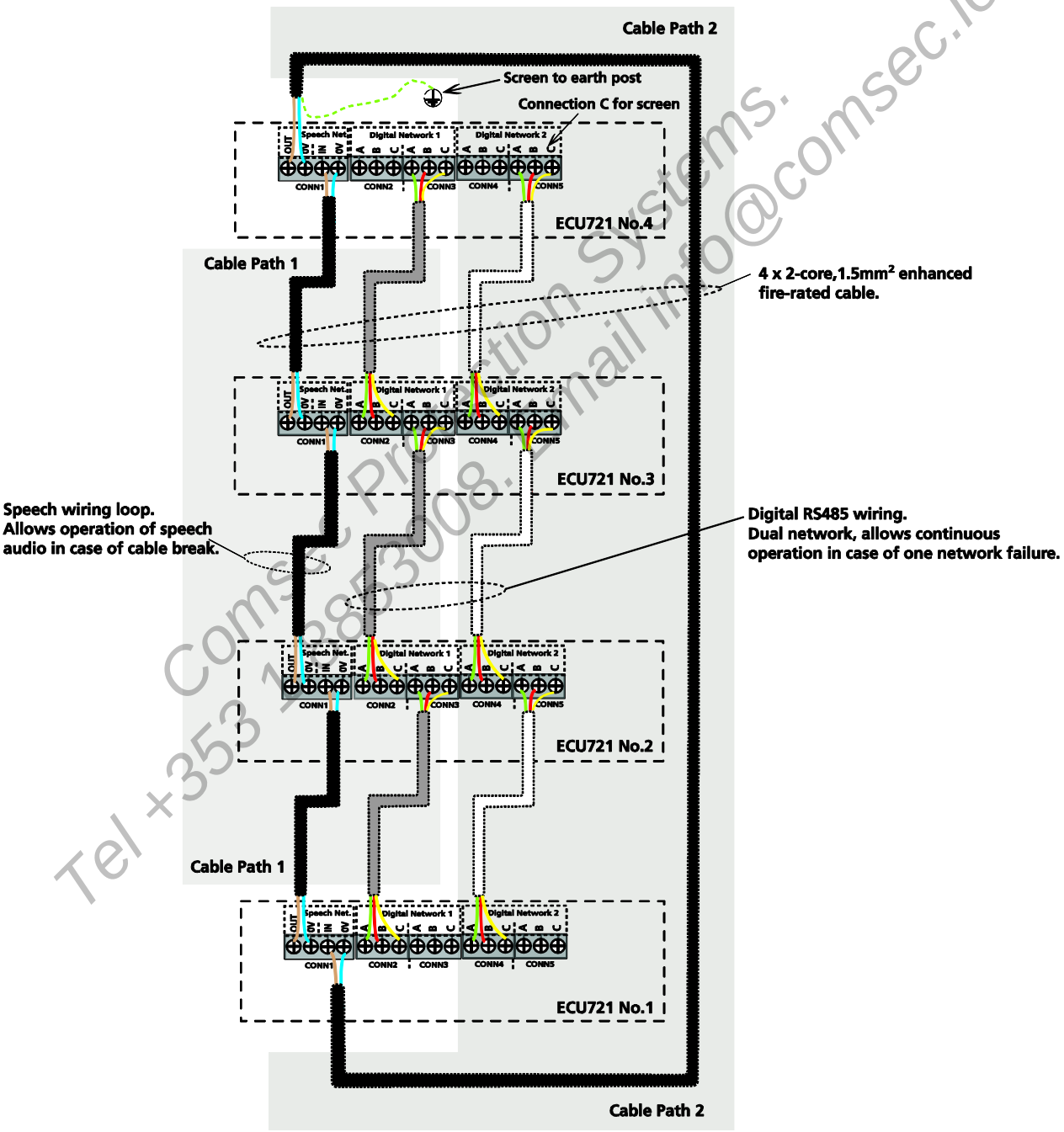
9 Network Connections (Optional)

The ECU721 card transmits speech audio via a single wiring loop and digital data via two linear RS485 networks (Digital Networks 1 & 2). It should be network connected using 4 x 2-core, 1.5 mm^2 enhanced cable. Maximum length on the speech wiring loop, or digital linear wiring = 1 km. Two separate cable paths should be run with each path containing a single speech and data cable (which should not be mixed in the same cable).

Speech wiring loop: ECU721 No.1 (Speech OUT/0V) to ECU721 No.2 (Speech IN/0V); ECU721 No.2 (Speech OUT/0V) to ECU721 No.3 (Speech IN/0V); ECU721 No.3 (Speech OUT/0V) to ECU721 No.4 (Speech IN/0V); ECU721 No.4 (Speech OUT/0V) to ECU721 No.1 (Speech IN/0V).

Digital Network 1: ECU721 No.1 (Digital A/B/C) to ECU721 No.2 (Digital A/B/C); ECU721 No.2 (Digital A/B/C) to ECU721 No.3 (Digital A/B/C); ECU721 No.3 (Digital A/B/C) to ECU721 No.4 (Digital A/B/C).

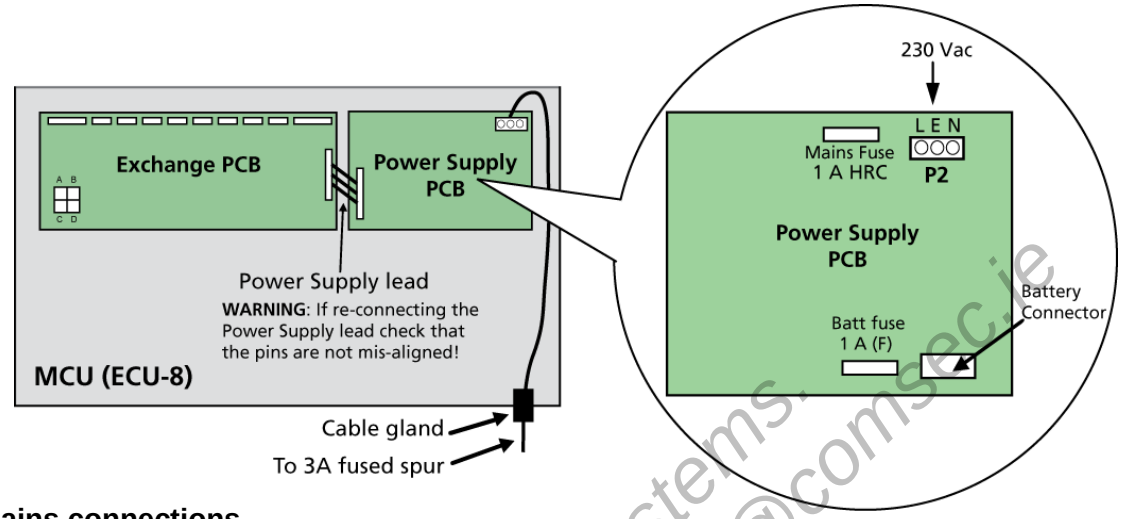
Digital Network 2: Same wiring configuration as Digital Network 1.



10 Mains Wiring

Connect mains to the MCU

See BS 5839-9 2003 section 13.



MCU mains connections

The MCU requires fixed wiring using 3-core cable (no less than 0.75 mm^2 and no more than 2.5 mm^2) fed from an isolating un-switched fused spur, fused at 3 amps and must not be connected using a plug and socket. The 230 VAC cable MUST enter the enclosure via one of the inlets at the bottom right hand corner of the enclosure.

Ensure that mains cables are kept as far away as possible from all other cables.

The mains supply should be exclusive to the EVCS. Circuit breakers supplying power to the system should be marked 'EMERGENCY VOICE COMMUNICATION SYSTEM - DO NOT SWITCH OFF'.

A separate fused spur should be used for the MCU and should be marked 'EMERGENCY VOICE COMMUNICATION SYSTEM - DO NOT SWITCH OFF'.
See BS 5839-9 13.2 for more details.

Terminate the mains input lead using the three-way plug supplied with the power supply PCB and ensure that correct polarity is observed.

The incoming mains earth connection must be connected directly to the three-way plug (P2) and NOT to the main chassis earth-point.

The Power Supply Unit (PSU) earth strap must be connected to the main chassis earth point before operation.

11 Fitting Outstations & DPTA Interface

11.1 Cables

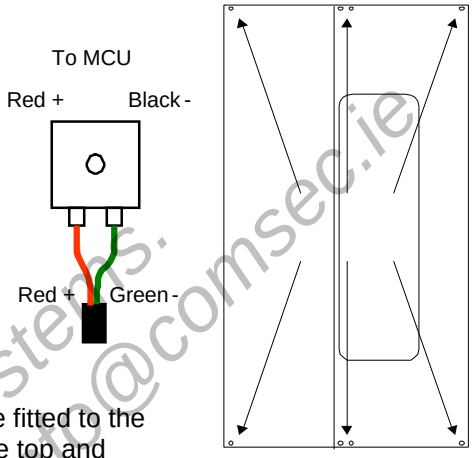
See section 4.

11.2 Location

See section 6.1.

11.3 Fitting type A outstation (THS1-E or THS1-ET)

Open the case and unscrew the eight cross-head screws to remove the internal cover (see far right). This reveals the terminals and earth stud. Fix to the wall, remove the knock out above the terminals and fit a suitable cable gland. Connect the wires, as shown right



11.4 Fitting type B outstation (EVC302S or EVC302F)

Type B outstations are supplied complete with a back box that should be fitted to the wall using suitable fasteners. The back box has 20 mm knock-outs at the top and bottom. Gland the cable correctly and connect a sleeved earth wire to the earth stud.

Connect the line to the LINE IN + and LINE IN – terminals.

When installation is complete, secure the lid using the four machine screws. These have a secure pin-hex design that requires a special Allen key (supplied).

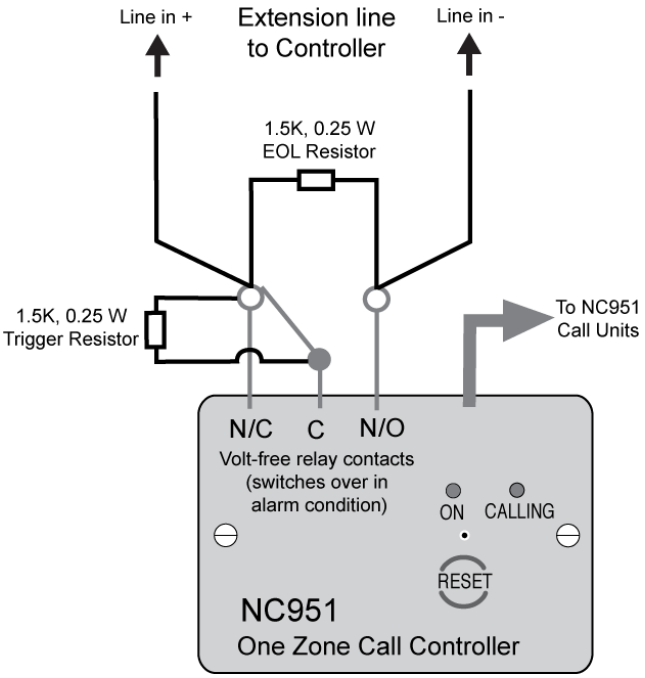
11.5 Wiring to a disabled persons toilet alarm (DPTA)

To install the DPTA system, refer to the documentation supplied with the DPTA (Part No. NC951).

To interface the DPTA system to the EVCS see wiring diagram right. The NC951 has an existing on-board volt-free relay contact.

Two 1.5k, 0.25 W, 10% resistors are required; the EOL resistor identifies the extension line as a DPTA and the trigger resistor when switched in, asserts an active alarm on the EVCS.

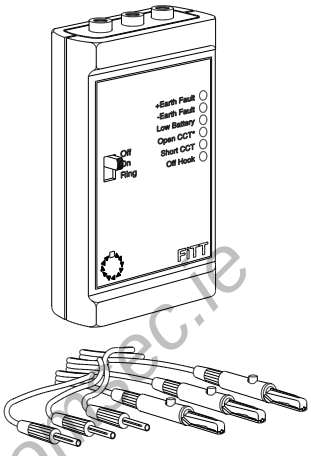
The 1.5K, 0.25 W resistors are supplied in the accessory pack.



12 Testing Extension Lines

12.1 Insulation resistance testing

Insulation resistance testing should be carried out with no electronic devices attached. Any devices connected to the lines will be destroyed and will not be covered by factory warranty.



12.2 The FiTT line tester

Note: See Specification (section 19) for component details.

Each extension line should be tested prior to termination and connection to the exchange circuit boards. We recommend that a SigTEL FiTT line tester is used to save time proving the cables and outstations are working correctly.

It also avoids the need for mains power for testing.

If a FiTT line tester is not available, use a multimeter to check wiring for continuity and correct polarity.

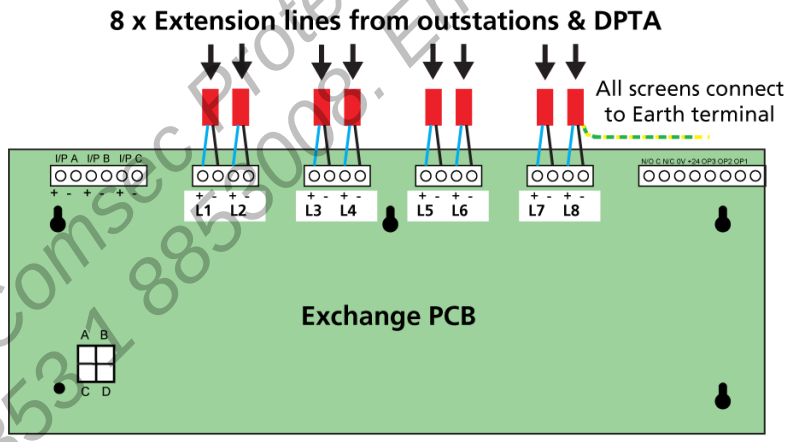
13 Second Fix Installation

13.1 Connecting extension lines to the MCU and expansion unit

Do not connect the extension lines until they have been tested and are fault-free.

Bring each extension line into the case via a suitable cable gland and connect to the terminals on the exchange PCBs, as shown below. Exchange PCBs are fitted in MCU, LCU and Expansion Units.

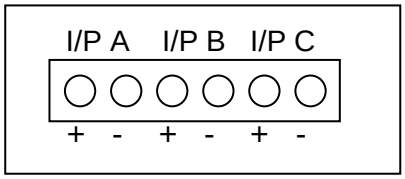
Connect the screens to the earth terminal in the back of the case.



13.2 Fault monitoring

Once configured, the line fault monitoring system monitors for open and short circuits (absence of an outstation constitutes open-circuit).

13.3 Input connections

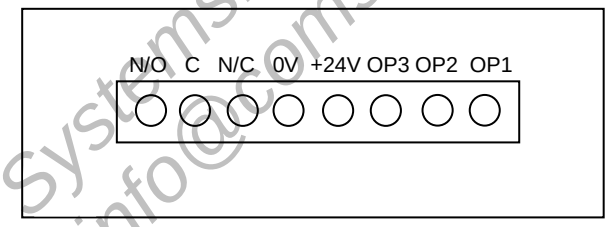


1. I/P A (Disable controls) – Disables Type A and Type B outstations.
2. I/P B (Disable controls) – Disables input signals from the DPTA.

   In order to prevent unauthorized use of the system it is possible to disable the controls until an external trigger is received, e.g. from a fire alarm control panel. I/P A & B are open-circuit, fail-safe system disablement inputs. Closing these inputs (shorting the connections) disables the system so that the system can then be enabled by opening the connections. No system configuration is required to use this facility and if they are left unconnected it will operate normally.

   Note: For a network system, only one MCU requires I/P A or I/P B wiring to the disablement source.
3. I/P C - Not currently used.

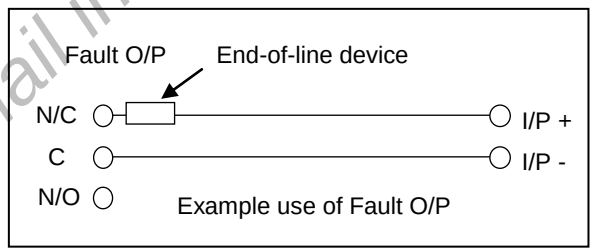
13.4 Output connections



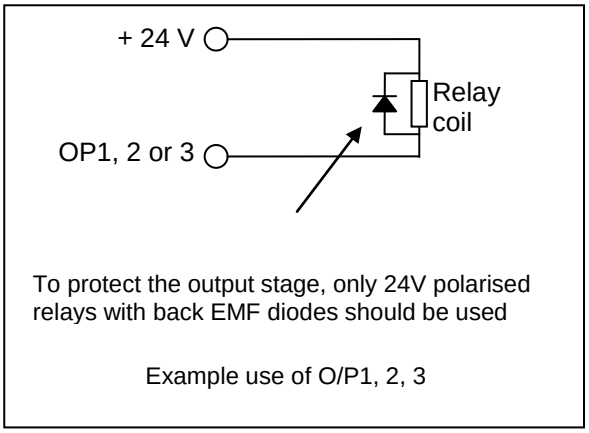
1. Fault output - The terminals marked N/O, C and N/C (see right) provide fail-safe fault outputs that can be connected to a fire alarm panel or other monitoring equipment.

   The end-of-line device supplied with the input unit should be connected at the MCU in order to monitor the wiring (see example right). When a fault occurs the relay disconnects the end-of-line device from the fire alarm panel.

   Note: For a network system, all MCU fault output relays will be activated.



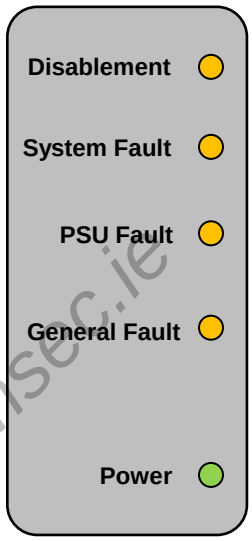
2. +24 V - Used to supply the output's auxiliary equipment, e.g. relays, etc.
3. OP1 (Call output) - An open collector output is available between the 0V and OP1 that conducts when a call is present on the system from Type A & B outstations.
4. OP2 output – Used for signalling of an active toilet alarm, e.g. to a strobe, beacon, etc.
5. OP3 output - Not currently used.



14 MCU Indicators & Controls

14.1 External indicators

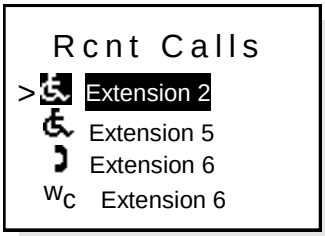
Indicator	Colour	What this means
Disablement	Amber	The EVCS is powered up and checking for faults but the MCU is disabled from making, or receiving calls, until an external trigger is applied, e.g. from a fire alarm panel. This is NOT a fault indicator. This function is used to stop nuisance/malicious use of the EVCS until the system is required.
System Fault	Amber	There is a problem with the microprocessor. If this indicator cannot be extinguished, there may be a serious problem with the microprocessor. Contact the service company responsible for the EVCS.
PSU Fault	Amber	There is a fault with the mains power supply or back-up batteries.
General Fault	Amber	There is a fault on the EVCS. The display will show more information.
Power	Green	Power (mains or battery) is present.



14.2 The display

The liquid crystal display (LCD) shows call status, system information, fault information and uses the following graphic symbols:

Graphic symbol	What this means
⊠	MCU (ECU-8)
□	LCU (ECU-8NT)
)	Type A (fire telephone) outstation
♿	Type B (disabled refuge) outstation
WC	Disabled persons toilet alarm (DPTA)
>	The display entry is highlighted, ready to be selected

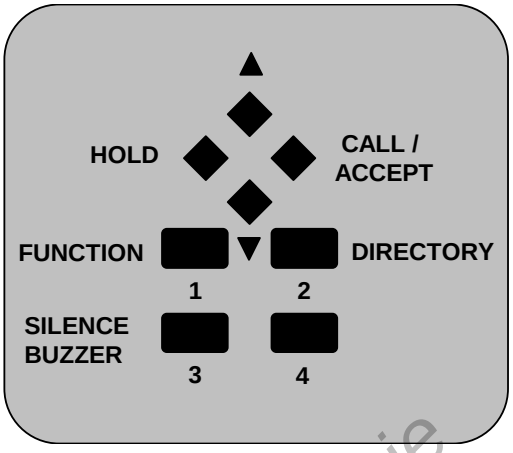


Example display

Display conventions
Standard / non-active displays are shown normally, e.g. '♿Extension 5'
Active displays are shown reversed, e.g. '>♿ Extension 2'

The flashing graphic symbol in front of an extension name means this extension is calling the MCU, or the MCU is calling the extension. The display's backlight also flashes red when the MCU is receiving or making a call.
A reversed graphic symbol in front of an extension name means you are connected to this extension.

14.3 External controls



The MCU's external control buttons are located on its keypad. They are multi-purpose and their functions depend on the MCU's current status.

Note: The numbers 1, 2, 3, & 4 are used for entering security PIN codes using the keypad (by responsible persons only). This code will be provided by the system installer.

Button label	What this means	When to press this button
▲	Up	Used to move up and down lists (e.g. phone lists) and menus (e.g. User Options menu).
▼	Down	
CALL / ACCEPT	Select	When the MCU's handset is off-hook press this button to either make an outgoing call to an extension, or accept an incoming call from an extension. Also, selects menu options.
HOLD	ESC back to previous display & Lamp test	When the MCU's handset is off-hook press this button to disconnect the current caller. When the MCU's handset is on-hook press this button to escape back to a previous menu. **Note**: To perform a lamp and buzzer test, press and hold this button.
FUNCTION & 1	Additional functions & security PIN code entry	Used to access to the 'User Opts' menu.
DIRECTORY & 2	Telephone directory & security PIN code entry	With the MCU's handset off-hook, toggles between a full list of extensions and a list of recent calls from extensions (if any). **Note**: The recent calls list is automatically cleared after a set time period (settable between 6 to 24 hours by a system engineer). Also, can be manually cleared.
SILENCE BUZZER & 3	Silence buzzer & security PIN code entry	Used to silence the MCU's internal buzzer.
4	Security PIN code entry	

14.4 Internal controls

Note: The controls inside the MCU are for use by the service company responsible for the EVCS. **Under no circumstances should these internal controls be accessed by Operators**.
The Reset and an Engineer Mode buttons are located on the Control PCB inside the front lid. The Engineer Mode button is used to allow configuration and testing of the system. The Reset button is normally only used to manually initiate a clean restart to the system, or to reset test calls that have been made from unassigned Type B outstations.

15 Fault Messages

Faults on the EVCS are normally non-latching and will clear if the fault disappears. The only exception being a watchdog fault which occurs at initial power-up, or after a system reset and stays latched until manually cleared. Normally this fault clears when accepted and the MCU reverts to normal operation.

If the EVCS has been configured previously and any extensions are now missing, or are incorrectly connected the relevant faults are displayed.

The display (right) show typical displays but may have a different number of faults.

```
EVCS
2 Faults
Press Accept
To View
```

Press CALL / ACCEPT button to view the fault(s).

Each fault display has two lines. The format depends on whether the fault relates to an extension or not.

Format 1: Extension faults	**Format 2: Non-extension faults**
Line 1 - Extension name	Line 1 - Fault description, e.g. mains fail
Line 2 - Fault description	Line 2 - Blank

Clearing faults

Most faults can be cleared in turn (e.g. watchdog fault), by pressing the CALL/ACCEPT button. Each fault that is no longer present will clear and the next fault will be presented.

You can also press ▲ and ▼ to navigate through the faults and select which ones to clear.

Remaining faults

All outstation faults should be cleared before configuration. Some faults, such as mains fail when setting up on batteries, may not clear and will stay on the display. Some faults may require investigation, or assistance from the service company responsible for the EVCS. If required, contact them directly for assistance quoting the exact nature of the fault which is shown on the display.

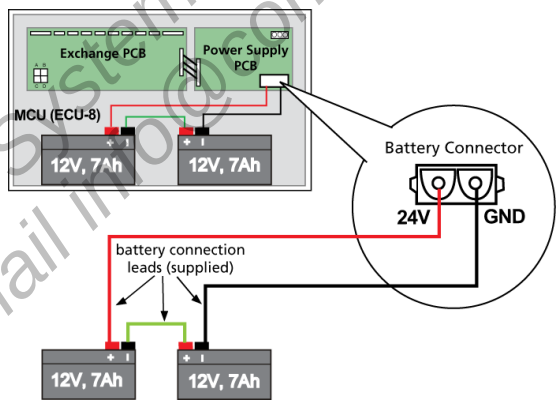
16 Powering Up and Testing

Setup using batteries

These instructions assume that the system is being set up and configured on batteries only. If it is configured on mains only, or mains and batteries, the fault displays will change accordingly.

Two 12 volt, 7 Ah VRLA batteries should be used for each MCU. These should be connected in series using the link provided with each unit. The terminal voltage of the batteries must be at least 22 V.

Do not leave batteries attached for long time periods whilst the mains is not connected, or is subject to disruption as they will become fully discharged and will have to be replaced.



Setup using mains

Fit a 3 amp fuse into the un-switched fused spur and turn the power on.

Turn the power on

As soon as the MCU receives power the handsets may ring for a moment and the MCU will sound an intermittent fault buzzer due, at least, to a Watchdog Fault. The Power LED, System Fault LED, PSU Fault and General Fault LED will be lit.

Cancel the fault buzzer by pressing SILENCE BUZZER button.

Check the outstations are working

Go to each outstation in turn.

At Type A outstations, the LED on the handset cradle will be lit. Lift the handset and speak. If you hear yourself in the earpiece then it is correctly connected.

At Type B outstations press the 'Push to Call or Answer' button and the red LED will light. This cannot be cancelled so when you have finished checking them all, press the Reset button inside the MCU's lid.

When all outstations are working, clear the fault display to make sure that there are no other problems and then use Auto Learn option to begin the system configuration (see section 17). If faults are present, handsets are off-hook, or call/answer buttons have been pressed, then the Auto Learn option will abort.

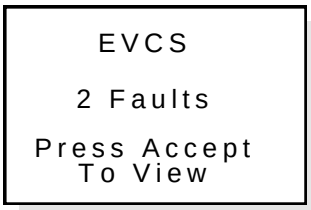
Check the toilet alarms are working

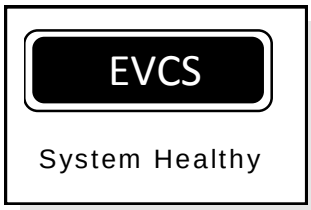
Go to each toilet alarm system in turn. Initiate an alarm from a call unit on each system and confirm the call is displayed at the MCU. Ensure all toilet alarms are cleared and reset.

Note: Toilet alarms can only be reset at the alarm point and cannot be reset at the MCU.

17 Automatic Configuration

If the fault menu is displayed, press HOLD button to exit the menu. The backlight will go out and the display will say 'System Healthy', or display the number of faults.



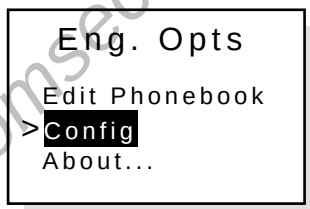


17.1 Non-networked MCU configuration

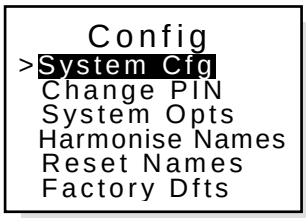
Note: If a networked MCU system is being configured refer to section 17.2.

Before configuring the MCU, ensure the MCU, all outstations and DPTA interfaces have been installed, connected and tested. Ensure that all handsets are on-hook and toilet alarms are cleared and reset.

1. Open the MCU lid and press the Engineer Mode button.
   The 'Eng. Opts' menu is displayed. Press ▼ to highlight the 'Config' option and press CALL/ACCEPT button.

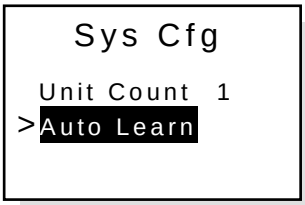


2. The 'Config' menu is displayed.
   'System Cfg' option is highlighted. Press CALL/ACCEPT button.

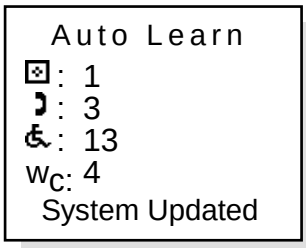


3. The 'Sys Cfg' menu is displayed.
   'Unit Count' option is highlighted.
   Ensure that the unit count is set to 1.

   Press ▼ to highlight 'Auto Learn' option and press CALL/ACCEPT.



4. The system will automatically perform an Auto Learn and detect the attached extensions. The Auto Learn system configuration is displayed at the MCU.



   The ⊡ symbol denotes the number of MCU (ECU-8) on the system.
   Note: This is limited to one unit for a non-networked system.
   The symbol denotes the number of Type A (fire telephone) outstations.
   The symbol denotes the number of Type B (disabled refuge) outstations.
   The W_C symbol denotes the number of DPTA on the system.
   Check the number of and and W_C match the number of connected extensions.
   Note: If at this stage there is a mismatch between the expected and the displayed number of system devices, press the CALL/ACCEPT button again at the MCU whilst the Auto Learn system configuration is displayed. This will cause the system to perform another learn of the devices on the system.

5. Press HOLD button multiple times to exit to the system healthy display. The system is now configured and can be used. Add/edit extension names at this point (see naming extensions – sections 17.5).

17.2 Networked MCU configuration

Note: If a single, non-networked MCU is being configured refer to section 17.1.

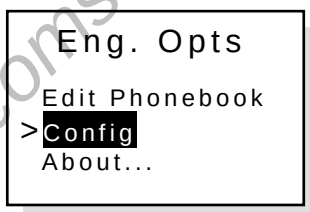
Before configuring the MCU network, ensure all MCU, outstations and DPTA interfaces have been installed, connected and tested. Ensure that all handsets are on-hook and toilet alarms are cleared and reset.

The network requires one MCU to be nominated as the master MCU for commissioning purposes. This MCU will have overall control of the EVCS. The remaining MCU on the network act as repeaters but have the ability to take control from the master MCU by entering a security PIN code, after configuration.

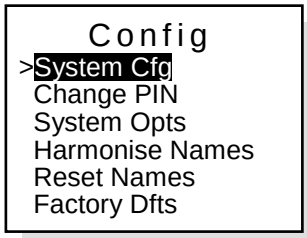
Select a master MCU

1. At the chosen master MCU, open the lid and press the Engineer Mode button. The 'Eng. Opts' menu is displayed.

2. Press ▼ to highlight the 'Config' option and press CALL/ACCEPT button.



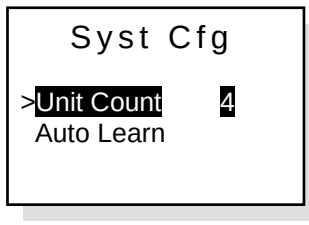
3. The 'Config' menu is displayed.
   'System Cfg' option is highlighted. Press CALL/ACCEPT button.



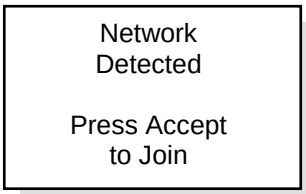
4. The 'Syst Cfg' menu is displayed.
   'Unit Count' option is highlighted. Press CALL/ACCEPT button to select the Unit Count number.

   Press ▼ or ▲ to set the total number of MCU on the network including the master MCU, (either 2, 3, or 4) and press CALL/ACCEPT button.

   The master MCU then requests repeater MCU to join it on the network.



5. Go to a repeater MCU and press CALL/ACCEPT button to join the network. Repeat this step for all remaining repeater MCU on the network.



6. After all repeater MCU have joined the network, the system will automatically perform an Auto Learn and detect the attached extensions. The Auto Learn system configuration is displayed at the master MCU, see example below right.

   Note: If a fault message is displayed at the master MCU an Auto Learn may not have been performed. Press HOLD button to exit the fault menu and start the Auto Learn process.

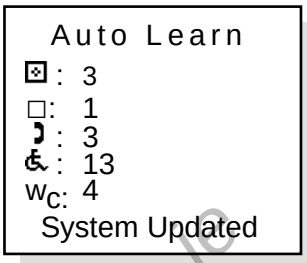
   The ⚄ symbol denotes the number of MCU (ECU-8) on the network.
   Note: This is a maximum of 4 units for a networked system.

   The ☐ symbol denotes the number of LCU (ECU-8NT).

   The 🕻 symbol denotes the number of Type A (fire telephone) outstations.

   The ♿ symbol denotes the number of Type B (disabled refuge) outstations.

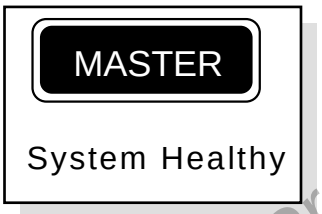
   The W_C symbol denotes the number of DPTA on the system.



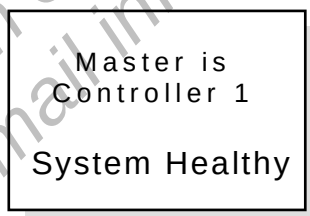
   Check the number of ⚄ and ☐ and 🕻 and ♿ and W_C match the number of network devices.

   Note: If at this stage there is a mismatch between the expected and the displayed number of network devices, press the CALL/ACCEPT button again at the master MCU whilst the Auto Learn system configuration is displayed. This will cause the system to perform another learn of the network devices.

7. Press HOLD button multiple times to exit to the system healthy display.
   The master MCU and repeater MCU will display their network status. See examples below.



Networked 'master' MCU



Networked 'repeater' MCU

   The system is now configured and can be used.

   Note: Extension names can be added/edited at this point (see naming extensions – sections 17.5).

17.3 Adding or replacing MCU, outstations or DPTA after commissioning

Note: Compatibility issues may arise if adding/replacing a controller panel with the latest software onto a networked system with earlier software. Some features of the new software may be disabled/unavailable to ensure smooth compatibility with the panels with earlier software. If the latest features are required, the other panels on the network must be replaced.

Firstly, make the necessary electrical or mechanical changes and all faults are cleared on the system.

To add an MCU (network system): Open the lid of the MCU and press the Engineer Mode button. Select the 'Config' menu, then 'System Cfg' menu, and then select 'Unit Count' option. Press ▼ or ▲ to set the number of MCU on the network including the master MCU (either 2, 3, or 4) and press CALL/ACCEPT button. The master MCU then requests repeater MCU to join it on the network. If an MCU is joining the network, go to that MCU and press CALL/ACCEPT button. The system will automatically perform an Auto Learn, search the network for all MCU and display the system configuration at the master MCU.

To replace a faulty MCU (network system):

Make sure that the faulty panel you are replacing is not the designated 'Master'. At the master MCU, open the lid and press the Engineer Mode button. Select the 'Config' menu, then 'System Cfg' menu, and then select 'Unit Count' option. Press ▼ or ▲ to set the number of MCU on the network including the master MCU (either 2, 3, or 4) and press CALL/ACCEPT button. The master MCU then requests repeater MCU to join it on the network. If an MCU is joining the network, go to that MCU and press CALL/ACCEPT button. The system will automatically perform an Auto Learn, search the network for all MCU and display the system configuration at the master MCU.

To add/remove an outstation or DPTA (non-network and network system): Open the lid of the master MCU and press the Engineer Mode button. The 'Eng. Opts' menu is displayed. Select the 'Config' menu, then 'System Cfg' menu, and then select 'Auto Learn' option. The system will automatically perform an Auto Learn and search for connected extensions. The system configuration is displayed at the MCU (or master MCU on a networked system).

17.4 Default extension names

On a networked system, the controller (MCU & LCU) extensions are allocated the following default names:

Controller 1: Extension 1 to Extension 16

Controller 2: Extension 17 to Extension 32

Controller 3: Extension 33 to Extension 48

Controller 4: Extension 49 to Extension 64.

17.5 Naming extensions

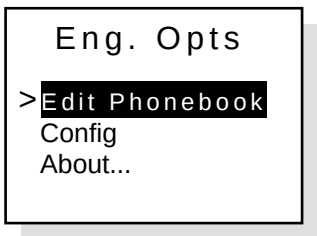
Open the lid of the MCU (or, in the case of a networked system, the master MCU) and press the Engineer Mode button. The 'Eng. Opts' menu is displayed.

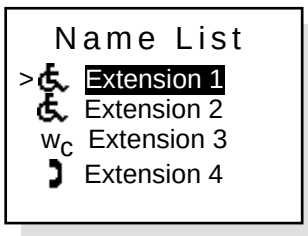
Select 'Edit Phonebook' option, see right.

A list of all system devices will be displayed:

⊡ or ☐ or 🕻 or ♿ or WC symbols denote whether they are an MCU, LCU, Type A outstation, or Type B outstation, or DPTA, see far right.

Note: The symbol ⊡ will only appear on a networked system.





To edit the extension names, see manual naming section 17.5.2.

17.5.1 Interactive naming

This function reduces the chance of errors with outstation locations and their names. It also tests that the audio is working acceptably. This function has limited use when naming toilet alarms as you cannot make an audio call to the MCU using the toilet alarm.

With a person at the MCU (or, in the case of a networked system, the master MCU) go to each outstation in turn.

At each outstation, lift the handset, or press 'Push to Call or Answer' button. This automatically selects that outstation for editing and the channel is opened for speech.

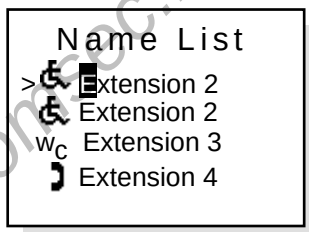
Check the audio quality of the line and tell the Operator at the MCU your position and they can edit the extension name immediately – see Manual naming, below.

Note: To avoid confusion, select one extension at a time during the naming process. If more than one extension is selected during this process, the lowest number will be selected for editing.

17.5.2 Manual naming

Press ▲ and ▼ to highlight the extension you want to name and then press CALL/ACCEPT button to select the first letter, as shown right.

Press ▲ and ▼ to change the letter, press CALL/ACCEPT button to accept and move to the next letter and press HOLD button to move to the previous letter.



Press FUNCTION button to change the character set as follows:

Starting with letter 'E' for example	Starting with a non-alphabetic character
1st press changes to lower case 'e'	1st press changes to characters 'SPACE'
2nd press changes to characters 'SPACE'	2nd press changes to numbers '0'
3rd press changes to numbers '0'	3rd press changes to upper case 'A'
4th press returns to upper case 'E'	4th press returns to lower case 'a'

Character set

Characters - SPACE ! " # $ % & ' < > * + , - . /

Numbers - 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @

Uppercase - A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\ ] ^ _ °

Lower case - a b c d e f g h I j k l m n o p q r s t u v w x y z ® ( )

When you have finished editing an extension, press DIRECTORY button to save the changes and then ▲ and ▼ to select another extension to name.

When you have finished naming extensions, press HOLD button multiple times to return to the default screen.

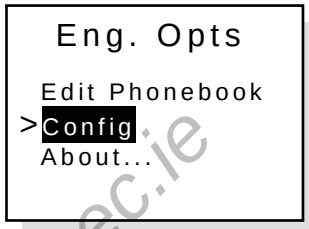
If you want to cancel editing an extension name, press button '4' to return to the previously saved description.

18 Additional Engineer Functions

18.1 Change the security PIN code

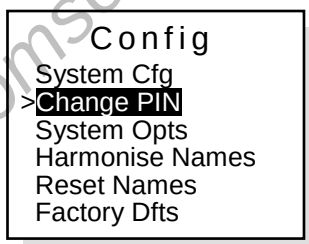
Note: For a networked system, this option can only be accessed at the master MCU. The default security PIN code is 2222.

1. Open the lid of the MCU and press the Engineer Mode button. The 'Eng. Opts' menu is displayed.

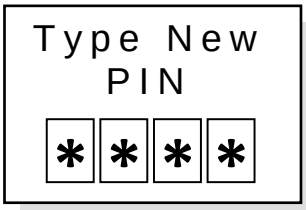


2. Press ▼ to highlight the 'Config' option and press CALL/ACCEPT button.

3. The 'Config' menu is displayed.
   Press ▼ to highlight 'Change PIN' option and press CALL/ACCEPT button.



4. Enter, then re-enter the new PIN number. Press CALL/ACCEPT button to confirm the PIN number change.
   Press HOLD button multiple times to exit to the system healthy display.

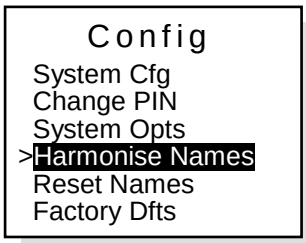


18.2 Harmonise names (networked system only)

Harmonise Names option is used to globally update all network settings, e.g. security PIN code changes, extension names, etc. This option is not normally required but could be used, for example, to update the extension name list if there was a mismatch on the controller panels.

1. Follow steps 1 and 2 previously listed in section 18.1.

2. The 'Config' menu is displayed.
   Press ▼ to highlight 'Harmonise Names' option and press CALL/ACCEPT button.
   All network settings will be updated globally on the network.
   After the harmonisation process is complete, press HOLD button multiple times to exit to the system healthy display.



18.3 Latch faults

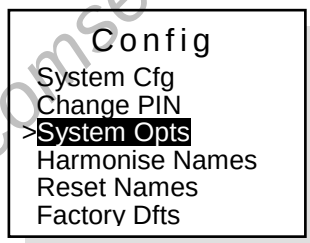
Note: For a networked system, this option can only be accessed at the master MCU.

Latch Faults option is not normally enabled but is available, if required, for fault diagnosis purposes, e.g. identifying intermittent faults.

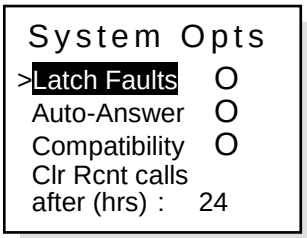
1. Open the lid of the MCU and press the Engineer Mode button. The 'Eng. Opts' menu is displayed.

2. Press ▼ to highlight the 'Config' option and press CALL/ACCEPT button.

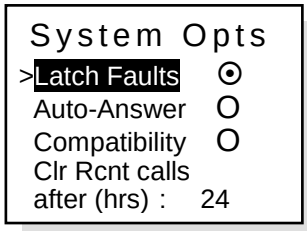
3. The 'Config' menu is displayed.
   Press ▼ to highlight the 'System Opts' option and press CALL/ACCEPT button.



4. The 'System Opts' menu is displayed and the 'Latch Faults' option is highlighted.



5. Press CALL/ACCEPT button to select the 'Latch Faults' option.
   Press HOLD button multiple times to exit to the system healthy display.



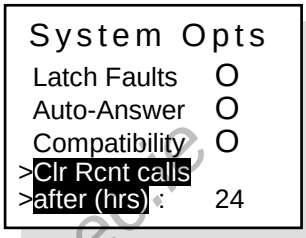
18.4 Clear recent calls

Note: For a networked system, this option can only be accessed at the master MCU.

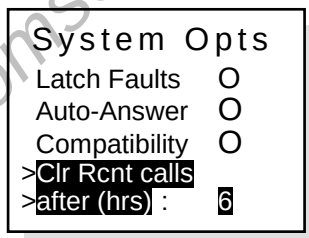
Clear Recent Calls enables the call activity log, held by the system, to be automatically cleared after a set time period. It can be set at hourly increments from 6 to 24 hours (default setting is 24 hours).

1. Follow steps 1, 2 & 3 previously listed in section 18.3.

2. The 'System Opts' menu is displayed.
   Press ▼ to highlight 'Clr Rcnt calls after (hrs)' option and press CALL/ACCEPT button.



3. Press ▼ or ▲ to set the time in hours, e.g. 6 hours, and press CALL/ACCEPT button to confirm the setting.
   Press HOLD button multiple times to exit to the system healthy display.



18.5 Auto-answer

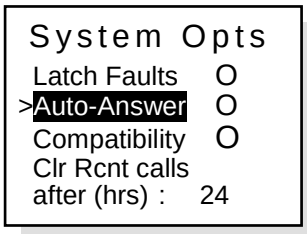
Note: For a networked system, this option can only be accessed at the master MCU.

Auto-Answer is an enhanced system feature that allows an MCU to automatically connect to an incoming call from outstation when its handset is picked up.

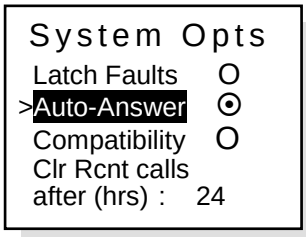
Note: If there are multiple incoming calls, there is less control for an Operator to manually select which call to answer. As a rule, the lowest *system* numbered extension will be answered first by the MCU.

1. Follow steps 1, 2 & 3 previously listed in section 18.3.

2. The 'System Opts' menu is displayed.
   Press ▼ to highlight 'Auto-Answer' option.



3. Press CALL/ACCEPT button to select the 'Auto-Answer' option.
   Press HOLD button multiple times to exit to the system healthy display.



19 Component Specifications

Note: The following specification applies for both MCU (ECU-8) & LCU (ECU-8NT) unless stated.

Power Supply and Batteries	
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.
Batteries, per MCU	2 x 12 V, 7 Ah
Mains supply/battery charger monitored for failure	Yes
Batteries monitored for disconnection and failure	Yes
Earth fault monitoring	Yes
Quiescent current when operating on batteries only	
MCU only with Mains fault buzzer silenced	85 mA
MCU only with Mains fault buzzer sounding	100 mA
MCU + Expansion Unit	160 mA
MCU + Expansion Unit with Mains fault buzzer sounding	175 mA
Quiescent current per Type A outstation	1 mA
Quiescent current per Type B outstation	3.2 mA
Off-hook current per Type A outstation	25 mA
Off-hook current per Type B outstation	25 mA
Max current *	500 mA
* *16 Type B outstations fitted; one connected, 15 calling in.*	
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.
Audio Section	
Microphone frequency response	250 Hz to 5 kHz +/- 3 dB
Earpiece frequency response	250 Hz to 4 kHz +/- 3 dB
Loudspeaker frequency response	
Line Specification	
Max. number of extensions per MCU	8
Number of outstations or DPTA per line	1
Max. number of Expansion Units per MCU	1
Lines monitored for open-circuit and short-circuit	Yes
Fuses	
Mains fuse	1 A (T) 20 mm HRC
Battery fuse	1 A (F) 20 mm
DPTA Resistors	
EOL & trigger resistors	1.5K, 0.25 W, 10% (supplied in accessory pack)
Cables	
Extension lines to outstations	2-core, 1.0 mm^2 or 1.5 mm^2, enhanced cable, up to 1 km per line (max. cable resistance is 40 ohms).
Extension lines to DPTA systems (NC951)	Suitable 2-core cable is required for each line.
MCU Power supplies	Fixed wiring using 3-core cable (no less than 0.75 mm^2 and no more than 2.5 mm^2) fed from an isolating un-switched fused spur, fused at 3 amps and must not be connected MCU using a plug and socket.
MCU to Expansion Unit	Two Cat 5 patch leads (supplied with Expansion Unit).
MCU to MCU – networked system	4 x 2-core, 1.5 mm^2 enhanced cable, up to 1 km in length.
MCU to ECU721 – networked system	One Cat 5 patch lead (supplied with ECU721).
Controls & Indicators	
Liquid Crystal Display (LCD)	128 x 64 pixel graphic LCD unit, two-colour backlight
Controls (pushbuttons)	Scroll up ▲, Scroll down ▼, Hold, Call/Accept, Function, Directory, Silence Buzzer, Four numbered buttons (1, 2, 3 & 4)
Indicators (LEDs)	Disablement (Amber), System Fault (Amber), PSU Fault (Amber), General Fault (Amber), Power (Green)
Internal controls (pushbuttons)	Engineer Mode, Reset
Case Colours	
MCU & Expansion Unit	Label background Pantone 429C. Lid and base RAL7305 (Grey texture)
THS1-E	RAL 3000(Red)
EVC302F& EVC302S	Fascia stainless steel, Base RAL 9005 (Jet Black)

Dimensions & Weight	
MCU dimensions	435 mm (w) x 270 mm (h) x 85 mm (d) approx.
MCU weight	3.1 kg unpacked / 4.0 kg packed (metal base & lid)
Expansion Unit dimensions	
Expansion Unit weight	
THS1-E/MK4 dimensions	200 mm (w) x 350 mm (h) x 105 mm (d) approx.
THS1-E/MK4 weight	3.8 kg unpacked / 4.5 kg packed
THS1-ET/MK4 dimensions	200 mm (w) x 345 mm (h) x 125 mm (d) approx.
THS1-ET/MK4 weight	3.8 kg unpacked / 4.5 kg packed
T-BEZ dimensions	242 mm (w) x 395 mm (h) x 6 mm (d) approx.
T-BEZ weight	0.27 kg unpacked / 0.3 kg packed
EVC302F dimensions	175 mm (w) x 250 mm (h) x 55 mm (d) approx.
EVC302F weight	1.4 kg unpacked / 1.4 kg packed
EVC302S dimensions	175 mm (w) x 240 mm (h) x 53 mm (d) approx.
EVC302S weight	1.4 kg unpacked / 1.4 kg packed
FiTT dimensions	77 mm (w) x 135 mm (h) x 35 mm (d) approx.
FiTT weight	0.16 kg unpacked / 0.25 kg packed
SDM dimensions	48 mm (w) x 60 mm (h) x 30 mm (d) approx.
SDM weight	0.003 kg unpacked / 0.005 kg packed

20 New Features

As the software for the SigTEL Compact range of panels has been developed, new enhanced features have been added. These new features are listed in Table 1, below:

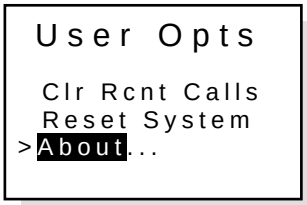
		Software Version			
		V 2.2.1	***V 2.5.14***	***V 2.6.14***	***V 3.1.17***
New Features	***Network Capability***	✗	✓	✓	✓
	Latch Faults	✗	✗	✓	✓
	Selectable Time for 'Auto-Clear Recent Calls'	✗	✗	✓	✓
	Auto-Answer	✗	✗	✓	✓
	Off-Hook and Jammed Button Detection	✗	✗	✓	✓
	DPTA Interface	✗	✗	✗	✓
Operator Instructions		***DAU0000082 Rev 1***	***DAU0000082 Rev 2***	***DAU0000082 Rev 3***	***DAU0000082 Rev 4***
Installation & Configuration Manual		***DAU0000081 Rev 1***	***DAU0000081 Rev 2***	***DAU0000081 Rev 3***	***DAU0000081 Rev 4***

Table 1 – New Features Comparison for SigTEL Compact

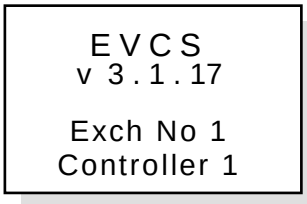
20.1 Software version

To find out which software version is installed on the EVCS follow the steps below:

1. At the MCU, with the handset on-hook, press FUNCTION button.
2. The 'User Opts' menu is displayed (see right).



3. Press the down cursor ▼ on the keypad to highlight the 'About...' option and press CALL/ACCEPT button. The software version is displayed (see right).



Note: Compatibility issues may arise if adding/replacing a panel with the latest software onto a networked system with earlier software. Some features of the new software may be disabled/unavailable to ensure smooth compatibility with the panels with earlier software. If the latest features are required, the other panels on the network must be replaced. Should there be any technical problems with SigTEL Compact, contact the technical support department for assistance.

21 Installation and Commissioning Certificate

Before the system and the Operator Instructions are handed over to the responsible person on site, the following certificate should be completed by the installer, or commissioning engineer.

Certificate for the EVCS at:

Address:

I/we being the person(s) responsible (as indicated by my/our signatures below) for the supply, installation and commissioning of the EVCS, particulars of which are set out below, certify that the system complies to the best of my/our knowledge and belief with the recommendations of BS5839-9:2002, except for the variations, if any, stated in this certificate.

Name (in block letters): Position: ……

Signature: Date:

For and on behalf of:

Address:
Postcode:

The extent of liability of the signatory is limited to the system described below.

Variations (see BS5839-9, Clause 6): ……

☐ All equipment operates correctly.

The following documents have been provided to the purchaser or user:

☐ 'As fitted' drawings.

☐ Operating and maintenance instructions.

☐ Sufficient representatives of the user have been properly instructed in the use of the system.

Maintenance

It is strongly recommended that, after completion, the system is tested, inspected and serviced in accordance with Section five of BS5839-9:2003.

The user should appoint a responsible person to supervise all matters pertaining to the EVCS in accordance with the recommendations of Section six of BS 5839-9:2003.

22 Terms and Definitions

For the purposes of these instructions the following terms and definitions apply:

disabled persons toilet alarm (DPTA) interface
DPTA interfacing is a secondary function to the primary purpose of the system which is to act as an EVCS. Toilet alarms can only be reset at the alarm point and cannot be reset by the EVCS. DPTA part number: NC951.
disabled refuge system
type of EVCS. A disabled refuge system connects hands-free Type B (disabled refuge) outstations to an MCU and is used during a fire emergency to inform a responsible person that someone needs immediate assistance to evacuate from the building.
emergency voice communication system (EVCS)
system that allows voice communication in either direction between an MCU and a number of other points throughout a building, or building complex, particularly in a fire emergency situation. There are two types of EVCS; disabled refuge systems and fire telephone systems. They may be separate, or they may be combined into one system and are designed to operate reliably in a fire emergency.
extension
each MCU has eight extensions. This can be extended to 16 with the addition of an Expansion Unit. One extension typically has one outstation (Type A or B) or a DPTA connected to it.
fire telephone system
type of EVCS. A fire telephone system connects Type A outstations to an MCU and is used by management, marshals at a sports ground and the fire service before, during and after a fire to communicate with fire marshals and fire fighters.
handset
telephone-style handset used for voice communication. MCU and Type A outstations both have handsets.
line control unit (LCU)
control unit which controls the EVCS. On a networked system, up to four MCU and/or LCU can be installed. The LCU is identical to an MCU but does not have a handset mounted on its front panel. Part number: ECU-8NT.
master control unit (MCU)
control unit which controls the EVCS. On a networked system, up to four MCU and/or LCU can be installed. The MCU has a handset mounted on its front panel. Part number: ECU-8.
master MCU
control unit on a network that has control over the EVCS, i.e. the ‘master’. Any other MCU on a network acts as a repeater. The master MCU can give control to a repeater MCU by entering a security PIN code. There can only be one master MCU at any one time. Part number: ECU-8.
network
communication link between MCU located at different control points.
off-hook
status of a handset when lifted from its normal rest position to initiate an outgoing call, or receive an incoming call.
on-hook
status of a handset when in its normal rest position, notification of an incoming call, or terminating a call.
outstation
unit located at a strategic point in a building, or building complex, that allows two-way voice conversation with an MCU. There are two types; Type A (fire telephone) and Type B (disabled refuge).
repeater MCU
control unit which forms part of a networked EVCS. They repeat messages displayed at the master MCU and have the ability to take control from the master MCU by entering a security PIN code. Part number: ECU-8.
type A (fire telephone) outstation
outstation that uses a telephone-style handset for communication. The housing consists of a wall-mounted, red steel cabinet which should be located at entrances and fire fighting lobbies. Type A enclosures may be lockable, in which case keys must be issued by the person responsible for the EVCS. Part numbers: THS1-E/MK4 or THS-ET/MK4.
type B (disabled refuge) outstation
outstation that uses an intercom-style unit with a call/answer button and built-in microphone and loudspeaker. Duplex operation is employed. The outstation has a stainless steel front plate. They should be located in disabled refuges at each storey exit. Part numbers: EVC302S or EVC302F.

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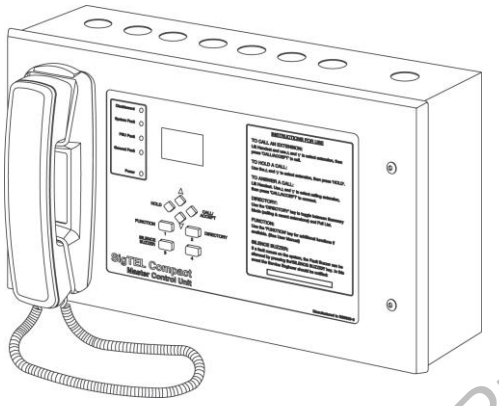
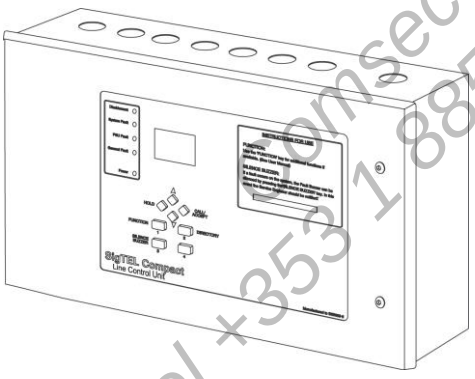
SigTEL Compact

Emergency Voice Communication System (EVCS)





Operator Instructions

Approved Document No. DAU0000082 Rev 4

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AN EXPLANTION OF TERMS AND DEFINITIONS USED IN THESE INSTRUCTIONS IS LISTED IN SECTION 16.

Contents

1 Regulations

Disabled refuge systems are called for by DETR Approved document B (Fire safety) volume 2, section 4, Design for vertical escape and BS 5588 Fire precautions in the design, construction and use of buildings, Part 8, Code of practice for means of escape for disabled people.

Fire telephone systems for buildings are called for by BS 5588 Fire precautions in the design, construction and use of buildings Part 5; Code of practice for firefighting stairs and lifts, Part 10; Code of practice for shopping complexes and Part 11; Code of practice for shops, offices, industrial, storage and other similar buildings.

Fire telephone systems for sports venues are called for by the Guide to safety at sports grounds.

The installation of EVCS is covered by BS 5839-9 Fire detection and fire alarm systems for buildings – Part 9: Code of practice for the design, installation, commissioning and maintenance of emergency voice communication systems.

2 Safety

The EVCS is safe to operate provided it has been installed in compliance with the manufacturer's instructions and used in accordance with this instruction.

DO NOT open the control enclosures as mains voltages are present inside. There is no need to open these enclosures except to carry out maintenance, or remedial work. Such work must be carried out by competent service personnel who are fully conversant with the installation manual for this product.

If equipment is damaged in any way, advise the person responsible for the EVCS at the site.

Regular servicing of the EVCS is required by BS 5839-9, by a competent organisation on a continuous maintenance contract. A fully itemised report of the status of the installation should be obtained at least once a year.

Management of the site is required by law (The Regulatory Reform (Fire Safety) Order 2005) to appoint a responsible person to ensure the EVCS (and other safety systems) remains operational.

3 System Overview

The EVCS provides reliable two-way communication between a permanently manned control room and key points on the site in a fire emergency. The EVCS comprises of fire telephone and/or disabled refuge systems.

Fire telephone systems are for use by trained people as part of the fire safety procedures at the site. Disabled refuge systems are for use by untrained people communicating with a trained Operator.

The two systems differ from a standard telephone or intercom system in the following ways:

- Outstations do not have to dial the MCU, they call the MCU as soon as their handsets are picked up (at Type A outstations), or the 'Push to Call or Answer' button is pressed (at Type B outstations)
- Outstations cannot call other outstations
- Type A (fire telephone) outstations may be in locked housings to prevent unauthorised access
- The EVCS operates from mains and has battery back-up in case of mains failure so that it is always available
- If there is a fault, a buzzer sounds intermittently at an MCU. Details of the problem are shown on the display. If the fault is not rectified the fault buzzer resounds after a period of 6 hours.

Note: The system also has a disabled persons toilet alarm (DPTA) interface which is a secondary function to the primary purpose of the EVCS.

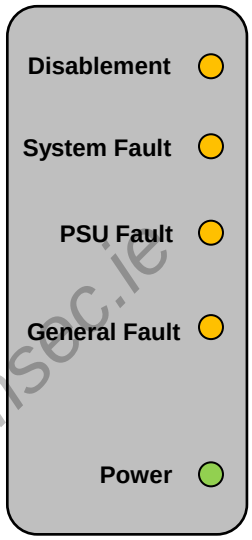
4 Disabling the System

If an MCU is installed in a public area, the system may be disabled to prevent unauthorized use. If this is the case, the system will be enabled either, automatically when the fire alarm operates, or manually by operation of a break-glass call-point, or similar control. When disabled, the EVCS continues to check for faults but the MCU are suppressed from making, or receiving calls until an external trigger is applied.

5 MCU Indicators & Display

5.1 External indictors

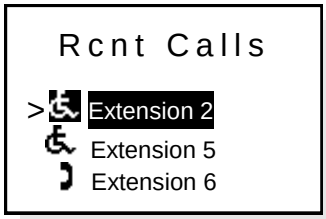
Indicator	Colour	What this means
Disablement	Amber	The EVCS is powered up and checking for faults but the MCU is disabled from making, or receiving calls, until an external trigger is applied, e.g. from a fire alarm panel. This is not a fault indicator. This function is used to stop nuisance/malicious use of the EVCS until the system is required.
System Fault	Amber	There is a problem with the microprocessor. If this indicator cannot be extinguished, there may be a serious problem with the microprocessor. Contact the service company responsible for the EVCS.
PSU Fault	Amber	There is a fault with the mains power supply or back-up batteries.
General Fault	Amber	There is a fault on the EVCS. The display will show more information.
Power	Green	Power (mains or battery) is present.



5.2 The display

The display shows call status, system information, fault information and uses the following graphic symbols:

Graphic symbol	What this means
⊡	MCU
□	LCU
)	Type A (fire telephone) outstation
♿	Type B (disabled refuge) outstation
WC	Disabled persons toilet alarm (DPTA)
>	The display entry is highlighted, ready to be selected



Display conventions

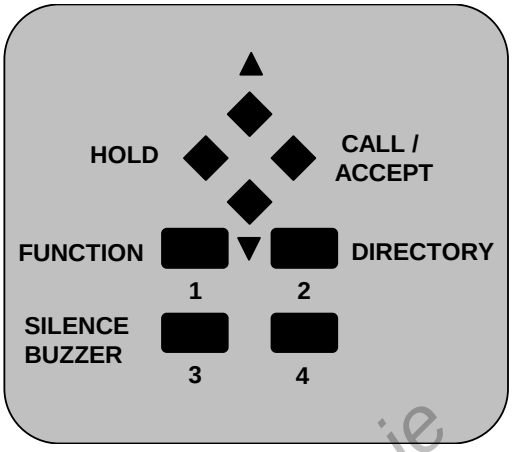
Standard / non-active displays are shown normally, e.g. '♿Extension 5'

Active displays are shown reversed, e.g. '>♿ Extension 2'

The flashing graphic symbol in front of an extension name means this extension is calling the MCU, or the MCU is calling the extension. The display's red backlight also flashes when an outstation is ringing in.

A reversed graphic symbol in front of an extension name means you are connected to this extension.

6 MCU Controls



Note: The controls inside the MCU are for use by the service company responsible for the EVCS. **Under no circumstances should these internal controls be accessed by Operators**.

The MCU's external control buttons are located on its keypad. They are multi-purpose and their functions depend on the MCU's current status.

Note: The numbers 1, 2, 3, & 4 are used for entering security PIN codes using the keypad (by responsible persons only). This code will be provided by the system installer.

Button label	What this means	When to press this button
▲	Up	Used to move up and down lists (e.g. phone lists) and menus (e.g. User Options menu).
▼	Down	
CALL / ACCEPT	Select	When the MCU's handset is off-hook press this button to either make an outgoing call to an extension, or accept an incoming call from an extension. Also, selects menu options.
HOLD	ESC back to previous display & Lamp test	When the MCU's handset is off-hook press this button to disconnect the current caller. When the MCU's handset is on-hook press this button to escape back to a previous menu. **Note**: To perform a lamp and buzzer test, press and hold this button.
FUNCTION & 1	Additional functions & security PIN code entry	Used to access to the 'User Opts' menu (see sections 12 & 13).
DIRECTORY & 2	Telephone directory & security PIN code entry	With the MCU's handset off-hook, toggles between a full list of extensions and a list of recent calls from extensions (if any). **Note**: The recent calls list is automatically cleared after a set time period (settable between 6 to 24 hours by a system engineer). Also, can be manually cleared.
SILENCE BUZZER & 3	Silence buzzer & security PIN code entry	Used to silence the MCU's internal buzzer.
4	Security PIN code entry	

7 Fault Messages

Faults on the EVCS are normally non-latching and will clear if the fault disappears. The only exception being a watchdog fault which occurs at initial power-up, or after a system reset and stays latched until manually cleared. Normally this fault clears when accepted and the MCU reverts to normal operation.

If the EVCS has been configured previously and any extensions are now missing, or are incorrectly connected the relevant faults are displayed.

The display (right) show typical displays but may have a different number of faults.

```
EVCS
2 Faults
Press Accept
To View
```

Press CALL / ACCEPT button to view the fault(s).

Each fault display has two lines. The format depends on whether the fault relates to an extension or not.

Format 1: Extension faults	**Format 2: Non-extension faults**
Line 1 - Extension name	Line 1 - Fault description, e.g. mains fail
Line 2 - Fault description	Line 2 - Blank

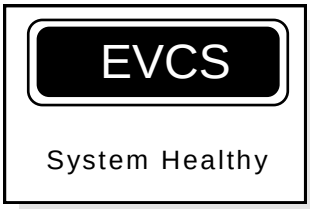
When a fault occurs, the relevant fault indicator is lit and a buzzer sounds intermittently at the MCU (or at the master MCU on a networked system).

Some faults may require investigation, or assistance from the service company responsible for the EVCS. If required, contact them directly for assistance quoting the exact nature of the fault which is shown on the display.

8 Check the MCU is Working

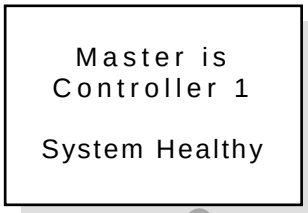
If the EVCS is healthy, the MCU's red indicator on the handset cradle is lit, the green Power indicator is lit, no fault or disablement indicators are lit and the display shows the current system status, see typical displays below.

Note: The display at the MCU is different for a networked system and a non-networked system.



Non-networked MCU

Networked 'master' MCU



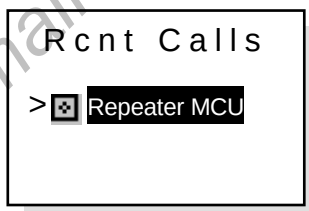
Networked 'repeater' MCU

9 Handling Calls at the MCU

Note: This section applies to both a non-networked MCU and the master MCU on a networked system. Additional call handling facilities are available for a networked system, see section 13.

9.1 To answer a call

When an extension calls in to the MCU, the ringer sounds and the display's red backlight flashes.
The MCU's display shows the name of the calling extension (or networked MCU), see examples below.



Note: ⊡ denotes MCU and is only seen on a networked system.

Lift the MCU's handset and press CALL / ACCEPT button to answer the call. If necessary, press ▲ and ▼ to highlight the extension you want to talk to and press CALL / ACCEPT button to answer the call.

The display's red backlight returns to normal.

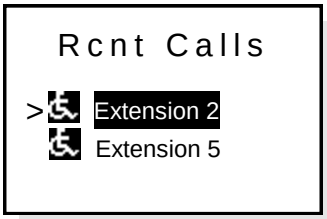
The symbol (♿ or 👂 or ⊡ or WC) will be reversed (i.e. ♿ or 👂 or ⊡ or WC) meaning you are connected to that outstation.

9.2 To end a call

Hang up the MCU's handset or press HOLD button to end the call.

9.3 Ending one call and answering another

If another call comes in whilst you are talking to an extension, the MCU will not ring, but the display indicates the name of the calling extension and the display's red backlight flashes. See typical display, right.



To end the first call and answer the new one:

Press ▲ and ▼ to highlight the call you want to end. Press HOLD button to end the call.

Press ▲ and ▼ to highlight the extension you want to talk to. Press CALL / ACCEPT button to talk to the extension.

9.4 Conference calls

If you are already talking to one extension and another extension calls, you can talk to both at once by selecting the new call without ending the original call. No more than three outstations/MCU should be involved in a conference call as audio quality is reduced.

9.5 To call an extension

Lift the MCU's handset. If there have been recent calls, the recent calls list is displayed otherwise, the full directory is shown. If there have been recent calls, you can toggle between recent calls and full directory by pressing DIRECTORY button. Press ▲ and ▼ to highlight the extension you want to talk to then press CALL / ACCEPT button to call.

To clear the recent calls list, see section 12.1.

9.6 Auto-answer feature

The EVCS can be set up with an Auto-Answer feature enabled. Normally, this feature is not enabled but can be programmed by a system engineer. When enabled, the MCU automatically answers an incoming call when its handset is picked up, rather than the Operator picking up the handset and manually selecting the extension of the incoming call before answering.

Note: If there are multiple incoming calls, there is less control for an Operator to manually select which call to answer. As a rule, when Auto-Answer is enabled, the lowest *system* numbered extension is answered first.

To answer a call - auto-answer enabled

When there is an incoming call, lift the MCU's handset. The call is automatically answered. If another extension calls into the MCU and requires answering, place the handset back on-hook to end the first call and wait for the MCU to start ringing again. When it does ring, lift the handset and the next extension calling in is automatically answered.

To end a call - auto-answer enabled

To end a call, hang up the MCU's handset.

Alternatively, if HOLD button is pressed you have the option of selecting an extension to ring.

To call an extension - auto-answer enabled

This is the same procedure as described in section 9.5.

10 Making a Call from an Outstation

There is no need to dial from an outstation as the system automatically calls the Operator at the MCU.

At Type A outstations, lift the handset and a double 'beep-beep' ringing tone sounds in the earpiece.

At Type B outstations, press the 'Push to Call or Answer' button – a double 'beep-beep' ringing tone sounds in the loudspeaker and the Call in Progress indicator is lit steady.

At the MCU the ringer sounds and the Operator can choose to answer.

If the Operator is talking to another outstation, an engaged tone (continuous short pips) sounds at the outstation's earpiece. The Operator knows there is a call, so stay on the line until it is answered.

11 Answering a Call at an Outstation

When the Operator at the MCU calls an outstation, a ringing tone is heard at the outstation. At the outstation, either lift the handset (at Type A outstations) or press 'Push to Call or Answer' button (at Type B outstations).

12 Additional Operator Functions

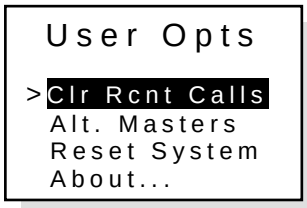
Additional Operator options are available at the MCU by pressing FUNCTION button (with the handset on-hook).

Note: Some Operator functions require a security PIN code entering. This code can only be changed by the EVCS service company. Therefore, ensure that the security PIN code is held by a responsible person and NOT lost. The default code is 2222 but keep a record of the code in the boxes, right.

With the MCU's handset on-hook, press FUNCTION button. The 'User Opts' menu is displayed.

Note: The 'User Opts' menu for a networked MCU is different to a non-networked MCU (see below):

Non-networked MCU



Networked 'master' MCU

Networked 'repeater' MCU

12.1 Clear recent calls

To make it easier to call back to outstations, the system keeps a record of incoming calls for up to 24 hours after the system was last used. To manually clear this list press FUNCTION button and select 'Clr Rcnt Calls' option.

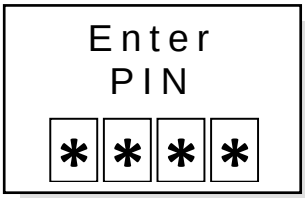
Note: The system can be set up to automatically clear the recent call list after a set time period (between 6 to 24 hours). This is set up by a system engineer.

12.2 System reset

This option provides a clean restart to the system and is used for an emergency recovery in case the system gets into an unforeseen condition. If faults / problems continue, contact the service company responsible for the EVCS.

1. Press FUNCTION button and select 'Reset System' option.

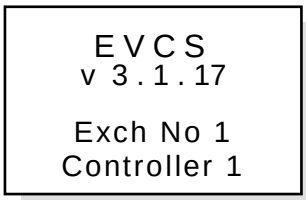
2. Enter the security PIN code using the keypad.
   A full system reset is carried out.



12.3 Software version

If you need to find out which version of software is installed on the EVCS press FUNCTION button and select the 'About...' option.

The software version is displayed, e.g. v 3 . 1 . 17.



12.4 Alt. masters

This function is only available on a networked system and gives control to a repeater MCU from the master MCU when no calls are present on the EVCS. See section 13.2.

12.5 Take control

This function is only available on a networked system and allows a repeater MCU to take control from the master MCU when no calls are present on the EVCS. See section 13.3. The repeater MCU becomes the master and likewise, the master MCU becomes the repeater.

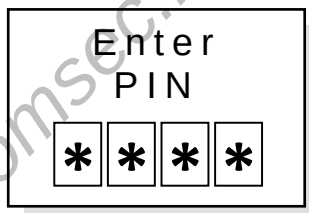
13 Additional Operator Functions (Networked Systems Only)

In addition to the functions listed in section 12, Operators on a networked system can access the following functions.

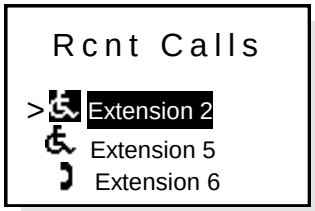
13.1 To take control from the master MCU at a repeater MCU (call mode)

1. When there is an incoming call on the system, the master MCU displays the call. All repeater MCU display the message shown right.

2. At any repeater MCU, lift its handset and enter the requested security PIN code using the keypad.

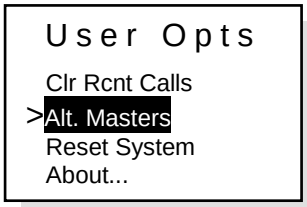


3. The repeater MCU takes control of the system and becomes the master MCU. If necessary, press ▲ and ▼ to highlight the extension you want to talk to and press CALL / ACCEPT button to answer the call. The displays at each MCU on the network confirm their network status.



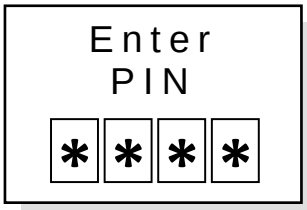
13.2 To give control to a repeater MCU from the master MCU (no-call mode)

1. When there is no incoming call on the system, at the master MCU (with its handset on-hook) press FUNCTION button. The 'User Opts' menu is displayed.

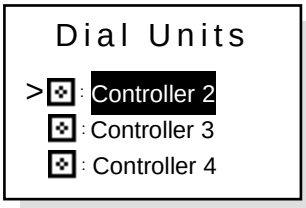


2. Press ▼ to highlight 'Alt. Masters' option and press CALL / ACCEPT button.

3. Enter the security PIN code using the keypad.



4. Press ▼ to highlight the location of the required master MCU and press the CALL / ACCEPT button. The master MCU changes location and the displays at each MCU on the network confirm their network status.

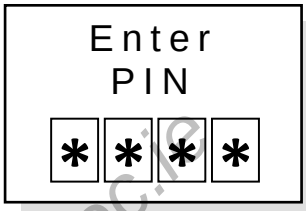


13.3 To take control from the master MCU at a repeater MCU (no-call mode)

1. When there is no incoming call on the system, at a repeater MCU (with its handset on-hook) press FUNCTION button. The 'User Opts' menu is displayed.

2. 'Take Control' option is highlighted. Press CALL / ACCEPT button.

3. Enter the security PIN code using the keypad. The master MCU changes location and the displays at each MCU on the network confirm their network status.

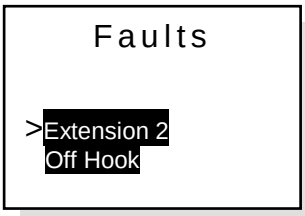


14 Off-Hook Detection

The EVCS has enhanced features to detect off-hook handsets and jammed buttons at outstations.

- **Off-hook detection (at Type A outstations):** Scenario: A call has been made from a Type A outstation, the call has been answered and ended at the MCU but the handset at the outstation has been left off-hook for longer than 2 minutes.
- **Jammed button detection (at Type B outstations):** Scenario: A call has been made from a Type B outstation, the call has been answered and ended at the MCU but the button at the outstation has pressed / jammed for longer than 2 minutes.

For the two scenarios above, after the 2 minutes have elapsed, the fault buzzer at the MCU sounds, the General Fault indicator lights and a fault message is displayed, see example below left. Press CALL / ACCEPT button at the MCU and details of the off-hook or jammed button extension is displayed, see example below right.



To rectify the fault either,

1. Call the extension from the MCU to check if someone is still waiting at the outstation for an answer, or
2. Go to the extension and replace the handset at Type A outstations, or release the jammed button at Type B outstations.

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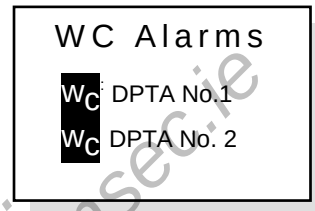
15 Monitoring Toilet Alarms

The monitoring of disabled persons toilet alarm (DPTA) is a secondary function to the primary purpose of the EVCS. If the site has toilet alarms AND they are connected into the EVCS, then active toilet alarms will be displayed at the MCU. As toilet alarm monitoring is a secondary function, any toilet alarm will be suppressed from being displayed if there are any calls from/to the outstations. At the end of outstation calls, the activated toilet alarm calls will be displayed.

Toilet alarms received at the MCU can only be reset at the alarm point and cannot be reset at the MCU. Someone has to physically go to the location of the toilet alarm in order to reset it.

On the MCU's display, toilet alarms are denoted by the graphic symbol 'WC' which is reversed 'WC' when active. This symbol will never appear in the same list as outstations and pressing the DIRECTORY button (with the handset on-hook) will not show toilet alarms because you cannot call them. Similarly, toilet alarms will not appear in the Recent Calls list.



When a toilet alarm is activated, its name is displayed at the MCU. The buzzer operates continuously (to distinguish it from fault and EVCS operation). The buzzer can be temporarily silenced but will restart if the toilet alarm is not reset within 5 minutes. When the toilet alarm is cleared the MCU automatically reverts to normal mode.

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16 Terms and Definitions

For the purposes of these instructions the following terms and definitions apply:

disabled persons toilet alarm (DPTA) interface
DPTA interfacing is a secondary function to the primary purpose of the system which is to act as an EVCS. Toilet alarms can only be reset at the alarm point and cannot be reset by the EVCS. DPTA part number: NC951.
disabled refuge system
type of EVCS. A disabled refuge system connects hands-free Type B (disabled refuge) outstations to an MCU and is used during a fire emergency to inform a responsible person that someone needs immediate assistance to evacuate from the building.
emergency voice communication system (EVCS)
system that allows voice communication in either direction between an MCU and a number of other points throughout a building, or building complex, particularly in a fire emergency situation. There are two types of EVCS; disabled refuge systems and fire telephone systems. They may be separate, or they may be combined into one system and are designed to operate reliably in a fire emergency.
extension
each MCU has eight extensions. This can be extended to 16 with the addition of an Expansion Unit. One extension typically has one outstation (Type A or B) or a DPTA connected to it.
fire telephone system
type of EVCS. A fire telephone system connects Type A outstations to an MCU and is used by management, marshals at a sports ground and the fire service before, during and after a fire to communicate with fire marshals and fire fighters.
handset
telephone-style handset used for voice communication. MCU and Type A outstations both have handsets.
line control unit (LCU)
control unit which controls the EVCS. On a networked system, up to four MCU and/or LCU can be installed. The LCU is identical to an MCU but does not have a handset mounted on its front panel. Part number: ECU-8NT.
master control unit (MCU)
control unit which controls the EVCS. On a networked system, up to four MCU and/or LCU can be installed. The MCU has a handset mounted on its front panel. Part number: ECU-8.
master MCU
control unit on a network that has control over the EVCS, i.e. the ‘master’. Any other MCU on a network acts as a repeater. The master MCU can give control to a repeater MCU by entering a security PIN code. There can only be one master MCU at any one time. Part number: ECU-8.
network
communication link between MCU located at different control points.
off-hook
status of a handset when lifted from its normal rest position to initiate an outgoing call, or receive an incoming call.
on-hook
status of a handset when in its normal rest position, notification of an incoming call, or terminating a call.
outstation
unit located at a strategic point in a building, or building complex, that allows two-way voice conversation with an MCU. There are two types; Type A (fire telephone) and Type B (disabled refuge).
repeater MCU
control unit which forms part of a networked EVCS. They repeat messages displayed at the master MCU and have the ability to take control from the master MCU by entering a security PIN code. Part number: ECU-8.
type A (fire telephone) outstation
outstation that uses a telephone-style handset for communication. The housing consists of a wall-mounted, red steel cabinet which should be located at entrances and fire fighting lobbies. Type A enclosures may be lockable, in which case keys must be issued by the person responsible for the EVCS. Part numbers: THS1-E/MK4 or THS-ET/MK4.
type B (disabled refuge) outstation
outstation that uses an intercom-style unit with a call/answer button and built-in microphone and loudspeaker. Duplex operation is employed. The outstation has a stainless steel front plate. They should be located in disabled refuges at each storey exit. Part numbers: EVC302S or EVC302F.

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