APEX
INSTALLATION GUIDE

Issue 013 - September 2022

CAME ENTROTEC

CAME.COM/ENTROTEC

LEGAL AND COPYRIGHT NOTICE

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INSTALLATION SPECIFICATION

It is the responsibility of the installer to follow CAME Entrotec's installation and cable specification as well as ALL relevant wiring regulations. Failure to comply with CAME Entrotec's installation and cable specification may result in erratic operation of equipment and could invalidate any warranty.

Installations must comply with the following standards:

- BS 7671: Requirements for electrical installations. IET Wiring Regulations 18th Edition.
- The Electricity at Work Regulations 1989

IET Wiring Regulations 18th Edition: Regulation 444 (MEASURES AGAINST ELECTROMAGNETIC DISTURBANCES) imposes requirements for segregation of circuits.

IET Wiring Regulations 18th Edition: Regulation 528 (PROXIMITY TO WIRING SYSTEMS TO OTHER SERVICES) imposes requirements for segregation of door entry / access control circuits (Band I), 230VAC mains circuits (Band II) and other higher voltage circuits.

IET Wiring Regulations 18th Edition: Regulations 541 and 542 impose requirements for earthing and bonding conductors. Ensure ALL metalwork is bonded to the buildings earth, this includes call panels, exit switches, cabinets and metal conduit. Ring terminals and earth points are provided on call panels and cabinets to terminate earth cables, ensure these connections are made.

⚠ WARNING - ISOLATION OF ELECTRICAL EQUIPMENT

In compliance with **The Electricity at Work Regulations 1989,** electrical equipment should be made dead to prevent danger while work is carried out on or near that equipment. No person shall be engaged in any work activity on or so near any live conductor.

WARRANTY AND SUPPORT

CAME Entrotec systems are renowned for their reliability and have a 2-year warranty on all CAME Entrotec manufactured products as standard. This warranty does not cover water damage, vandalism, mains electrical faults, lightning strikes, damage caused by miswiring or cable faults.

CAME Entrotec offer complimentary training courses and telephone support:
01506 886 235 - 8:30am to 5pm Mon-Thurs and 8:30am to 4pm Friday.
technicalsupport@entrotec.co.uk

CONTENTS

1 CABLE SPECIFICATION

The cabling system is based on Unshielded Twisted Pair (UTP) that meets or exceeds the construction and transmission performance requirements of **CW1308** (BT Spec)**, Cat5e** or **Cat6.** The cable must be **annealed pure copper** with a **conductor diameter ≥ 0.485mm**.

Failure to comply with this cable specification may result in erratic operation of equipment.

The specification below shows the minimum cable requirements, allow for extra cabling if redundancy is required.

	Connection	Cable
A	Controller to each ED3+, ED4+, EV or EV+ handset:	UTP cable, conductor diameter ≥ 0.485mm, 4 pair. 6 pair for EV+ handset on Concierge systems. Maximum cable run 150M.
B	Controller to each Vogue apartment station:	UTP cable, conductor diameter ≥ 0.485mm, 4 pair. 6 pair for cable run > 60M, maximum 150M.
C	Controller with PSU to controller with PSU:	UTP cable, conductor diameter ≥ 0.485mm, 4 pair min. 6mm² Single (Black). 1 x RG59 coax (if video).
D	Controller with PSU to controller without PSU:	UTP cable, conductor diameter ≥ 0.485mm, 4 pair min. 2 x 1.5mm² multi-stranded singles, 6mm² Single (Black). 1 x RG59 coax (if video).
E	Main controller with PSU to each panel:	UTP cable, conductor diameter ≥ 0.485mm, 4 pair. 2 x 0.75mm² multi-stranded singles (and earth).
F	Lock Relay to locks:	2 x 1.5mm² multi-stranded singles (route through any exit/fire switch or break glass for fail safe operation).
G	RFID access control reader to controller:	UTP cable, conductor diameter ≥ 0.485mm, 4 pair. NOT required for Call Panels with EasiTag.
H	Lock Relay to exit switch:	UTP cable, conductor diameter ≥ 0.485mm, 2 cores.
I	Lock Relay to fire switch:	UTP cable, conductor diameter ≥ 0.485mm, 2 cores.
J	Main controller to camera:	1 x RG59 coax (75 Ohm). UTP cable, conductor diameter ≥ 0.485mm, 2 cores.
K	Mains Supply Cable from Fused Spur to Controller with PSU:	2.5mm² twin and earth cable. Earth to be sleeved green/yellow.
L	Circuit Protective Conductor	6mm² earth cable.

⚠ WARNING

DO NOT USE CCA (Copper Clad Aluminium), **CCS** (Copper Clad Steel) or **CCAM** (Copper Clad Magnesium).
These cables are far less conductive than a pure copper cable and will cause erratic operation.

i TEST FOR PURE COPPER CABLE

The typical DC resistance of each core of UTP cable is ≤ 10 Ohms/100M.

1.1 TYPICAL CONFIGURATION

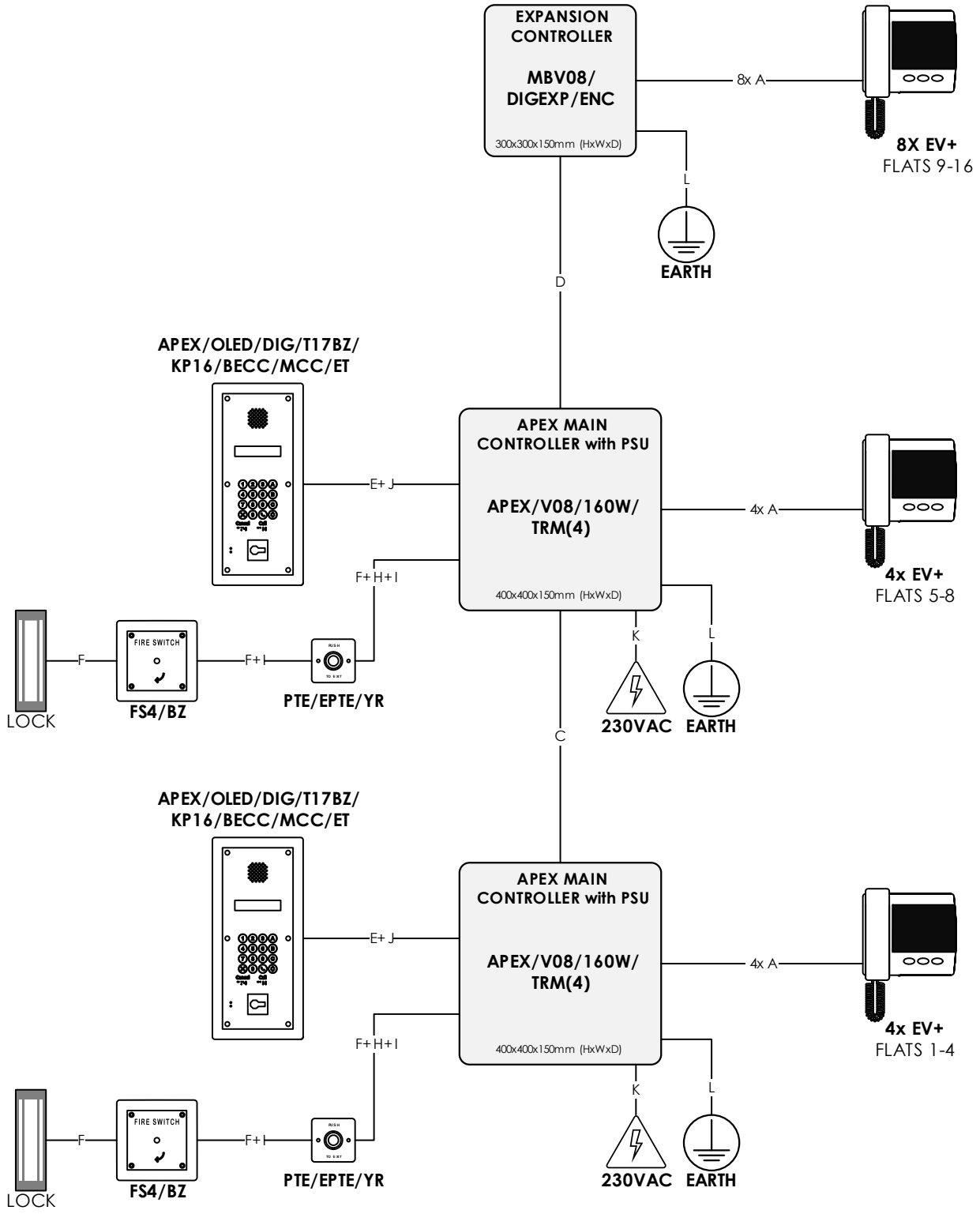


FIGURE 1 - MINIMUM CABLE REQUIREMENTS

2 OVERVIEW

2.1 TYPICAL CALL PANEL

2.1.1 Front View

FIGURE 2

A	Security Screw, M4, Pin Hex
B	Panel Camera
C	Speaker
D	OLED Display
E	Microphone
F	Keypad
G	RFID Proximity Reader

PRODUCT MAY VARY

Systems are configured to order.

2.1.2 Back View

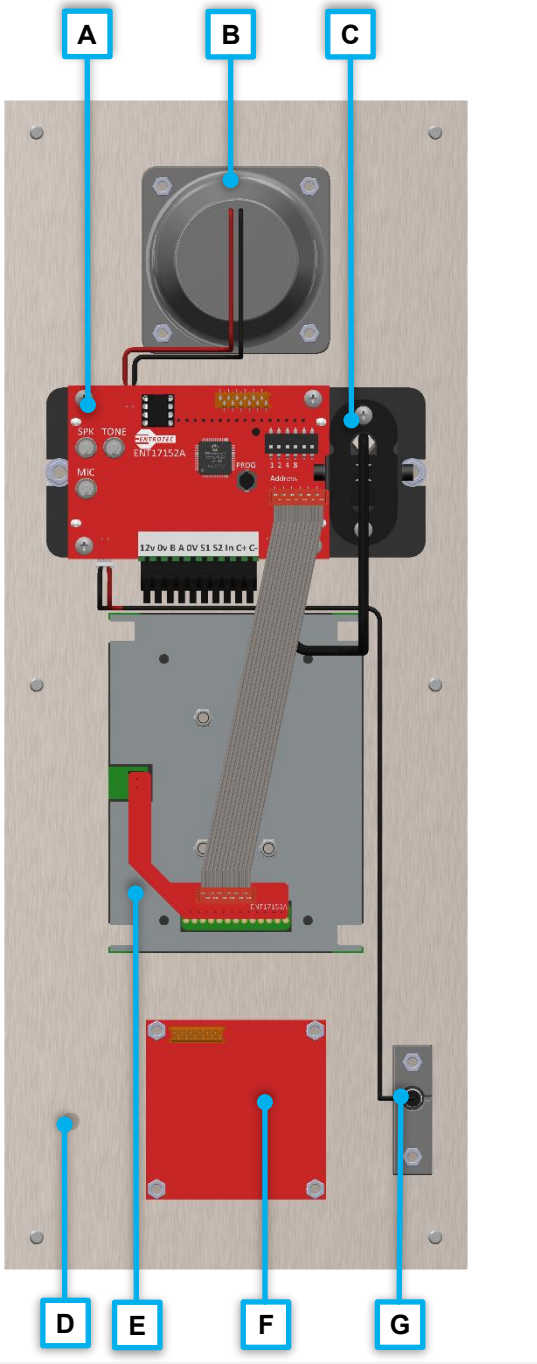


FIGURE 3

A	OLED PCB - ASS17152/*/*
B	Speaker
C	Panel Camera
D	Earth Point
E	Keypad
F	RFID Proximity Reader
G	Microphone

2.2 TYPICAL CONTROLLER

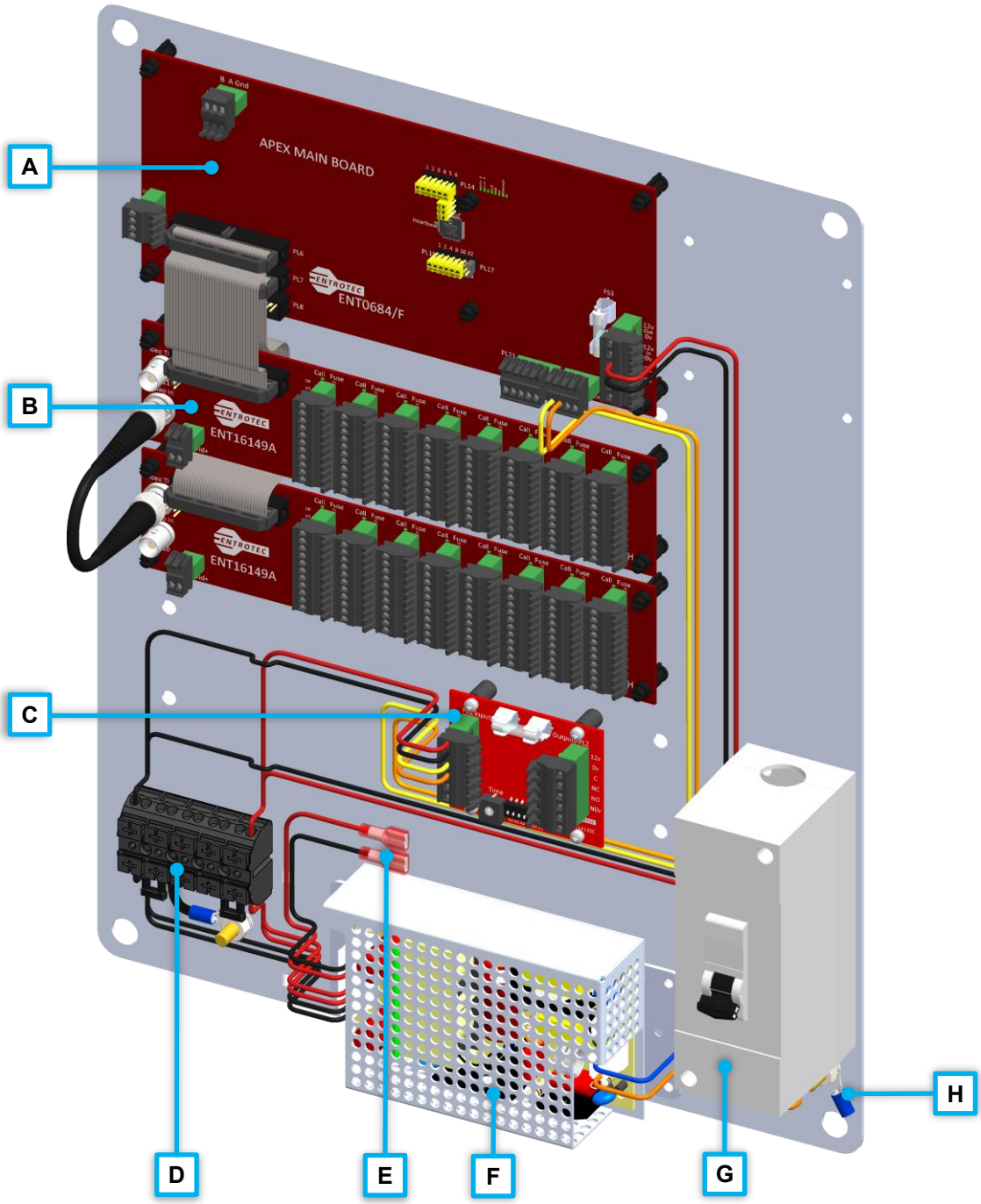


FIGURE 4

A	Apex Main Board (ASS0684/*/*)
B	Handset Marshalling Board (ASS16149/*/*)
C	Secure Lock Relay (ASS14143/*/*)
D	Power Distribution Terminal Block
E	Backup Battery Terminals
F	Power Supply Unit (PSU)
G	Miniature Circuit Breaker (MCB)
H	Earth Point and Ring Terminal

3 POWER SUPPLY

3.1 MAINS SUPPLY CONNECTIONS

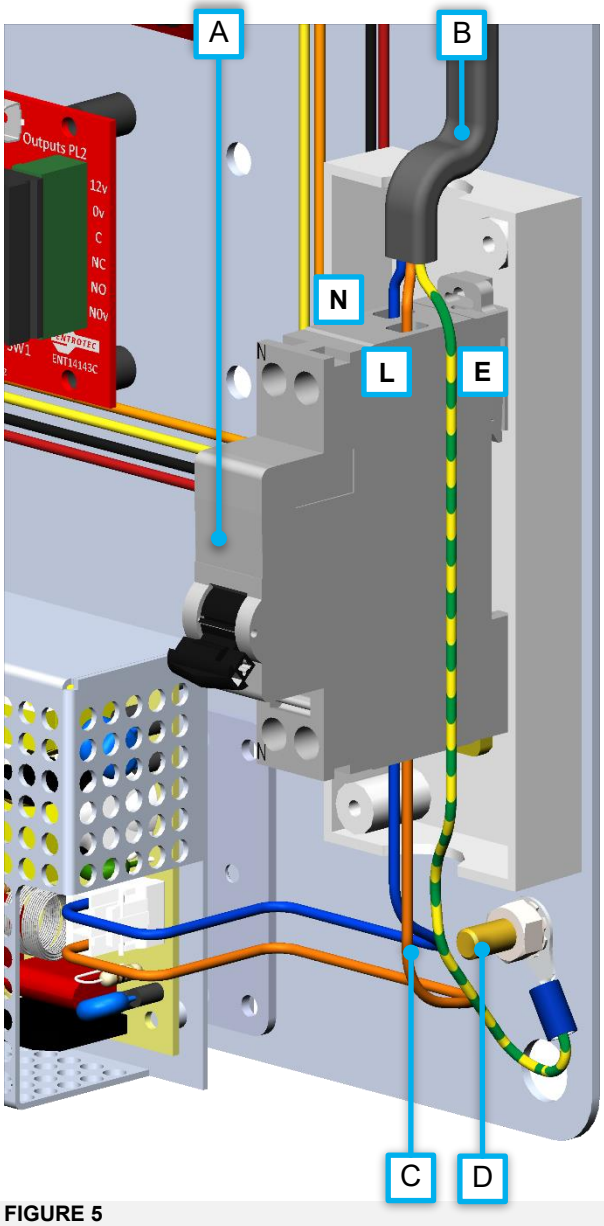


FIGURE 5

A	5A Miniature Circuit Breaker
B	Mains Supply Cable from Fused Spur - 2.5mm² Twin + Earth
C	Pre-Wired Load Cable to PSU
D	Earth Point
N	NEUTRAL - BLUE
L	LIVE - BROWN
E	EARTH - GREEN/YELLOW

⚠ WARNING

Isolate mains supply before connecting.

3.2 OUTPUT CONNECTIONS

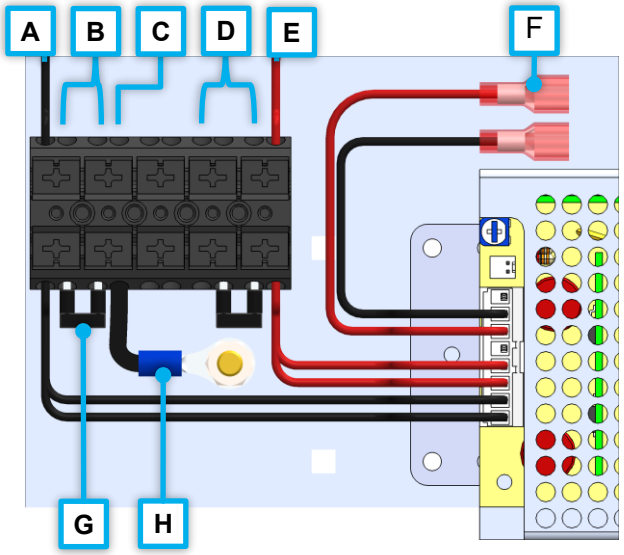
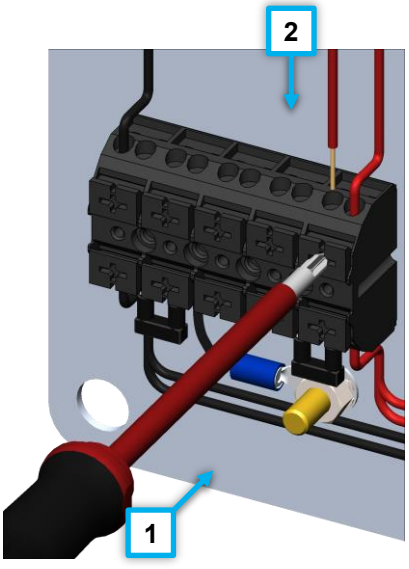


FIGURE 7

A	Pre-Wired 0V to Internal Devices
B	0V to External Devices e.g. Door Panels, Cameras
C	System Ground to Additional Controllers - 6mm² Single Core
D	12V to External Devices e.g. Call Panels, Cameras, Readers
E	Pre-Wired 12V to Internal Devices
F	Backup Battery Connections for Sealed Lead Acid Battery
G	Jumper Link
H	System Ground to Earth Link REMOVE FROM ADDITIONAL CONTROLLERS (section 3.3)

3.2.1 Power Distribution Terminal Block



- Strip cable 10mm.
- 4 conductors per pole.
- Accepts stranded or solid core.

1 Push Lever

2 Insert Cable

FIGURE 6

3.3 GROUND RULES

Earth is a direct connection to the buildings main earthing system. All metalwork including panels, chassis' and enclosures must be connected to Earth.

System Ground on Extra Low Voltage (ELV) systems, such as Apex, serves as a return path for signals and power within equipment, and on the interconnections between equipment.

The System Ground must be connected to Earth at a single point, even on multi-block systems. It is important to remove this connection on all additional controllers. This prevents the System Ground being connected to Earth points of differing potential.

⚠ WARNING

Connecting the System Ground to Earth more than once may cause interference.

3.3.1 System Ground Connections for Additional Controllers

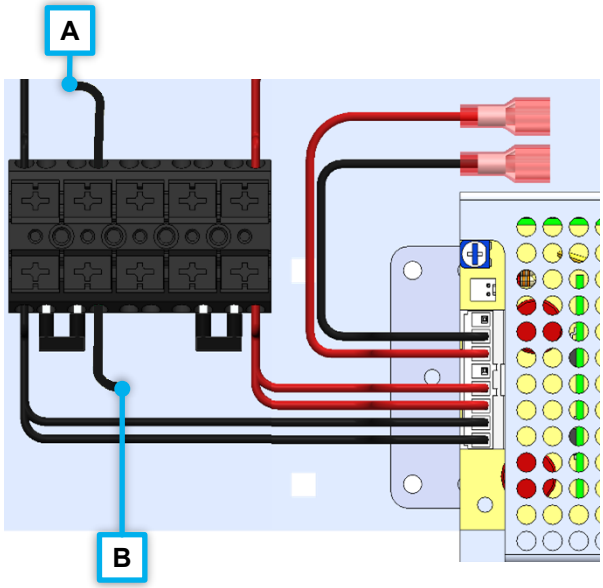


FIGURE 8

A	System Ground Connection to Next Controller(s)
B	System Ground Connection from Previous Controller(s)

3.3.2 System Ground to Earth Connections

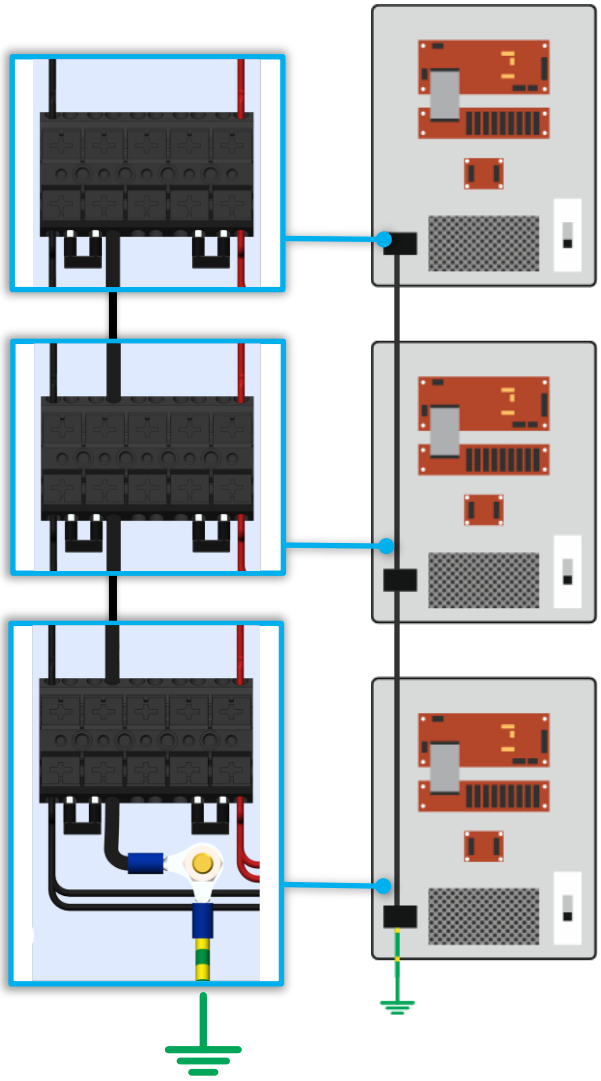


FIGURE 9

3.4 OUTPUT VOLTAGE SETTING

i SYSTEM VOLTAGE 13.8VDC

Always test the output voltage.
Only adjust if required.

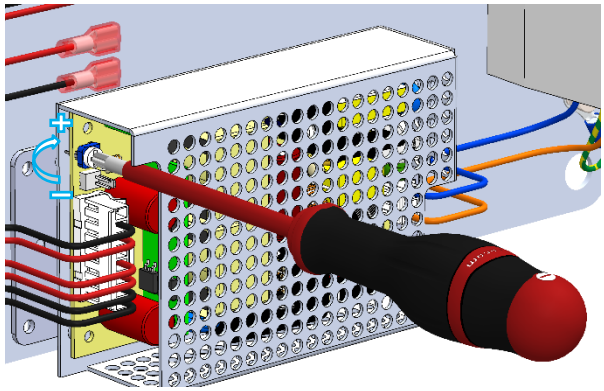


FIGURE 10

4 CALL PANEL

4.1 CALL PANEL CONNECTIONS

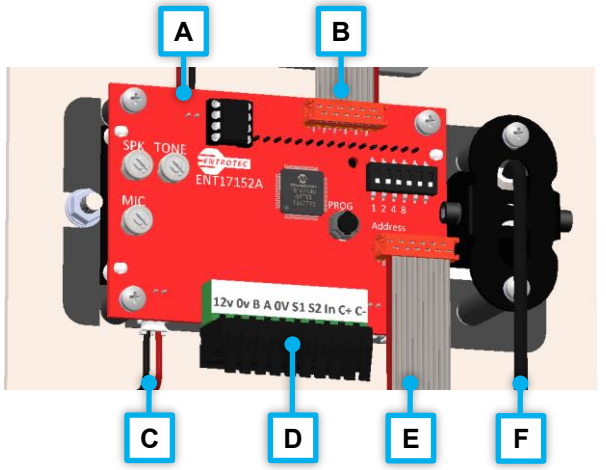


FIGURE 11

A	**PL2** - Speaker Connection
B	**PL6** - EasiTag Reader and Auxiliary Connection
C	**PL3** - Microphone Connection
D	**PL1** - Power Input + Apex Door Bus Connection
E	**PL8** - Keypad / Button Connection
F	Panel Camera Connection

⚠ WARNING

Switch off PSU before making connections.

4.1.1 Apex Door Bus Connection

For systems with 4 channel Secure Lock Relays, connections are covered in section 1 of Figure 12
For a single channel Secure Lock Relay, connections are covered in section 2 of Figure 12

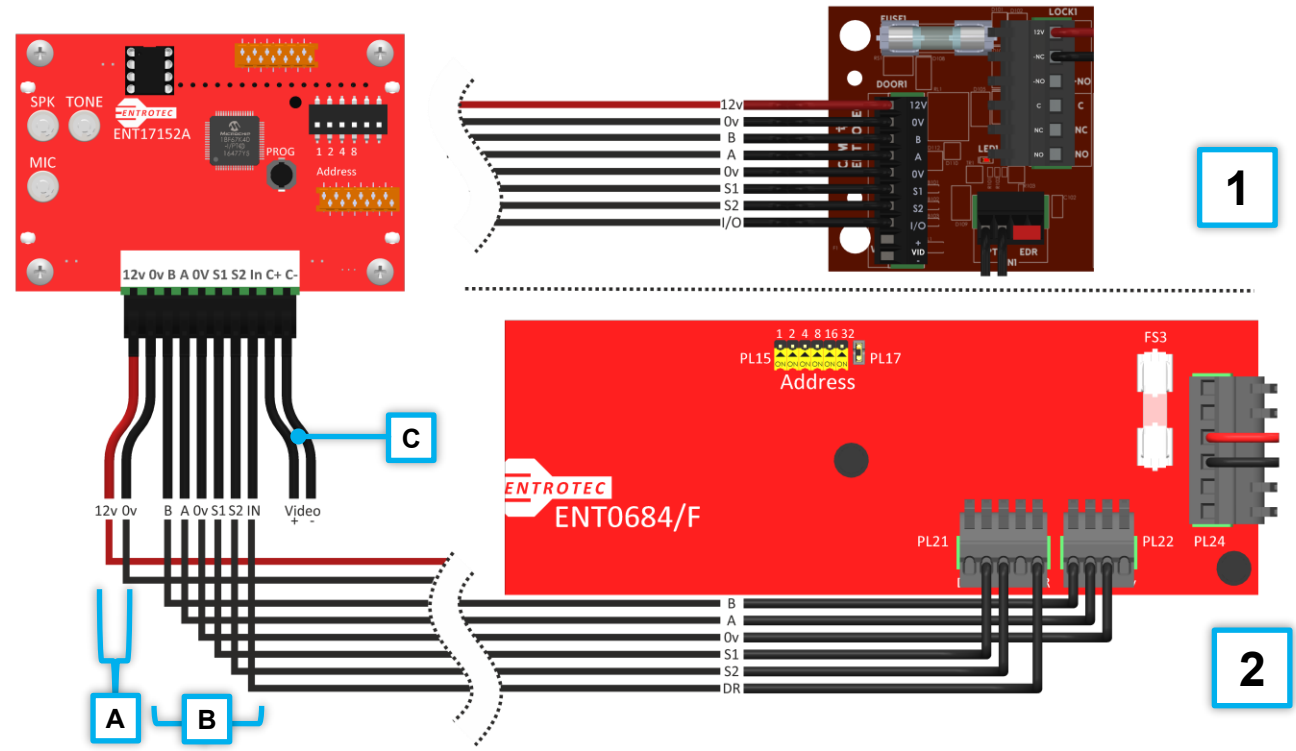


FIGURE 12

Item	Connection	Connects to:	Type
A	12v 0v	4 Channel Secure Lock Relay (DOOR 1-4) Or Power Distribution Terminal Block	Power 2x 0.75mm² singles
B	B A 0v S1 S2 In	Apex Main Controller PL22 PL21 (DR)	Data Data Data Ground Speech Speech Signal
C	Video +/-	Future Use	Twisted Pair Video

4.1.2 Panel Camera - Coax Connection

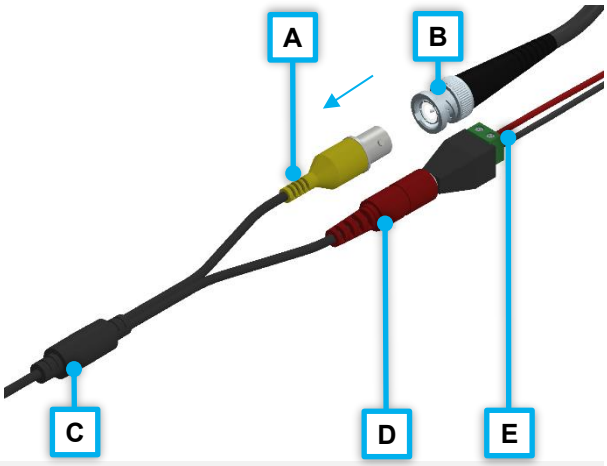


FIGURE 13

A	BNC Video Output
B	BNC (Male) - RG59 Coax Cable to Video Switch or Marshalling
C	Connection to Panel Camera
D	12VDC Input to Camera
E	Connection from Power Distribution Terminal Block

BNC INSULATION

Use a BNC connector with an insulating shroud or cover with insulating tape.

4.2 CALL PANEL SETTINGS

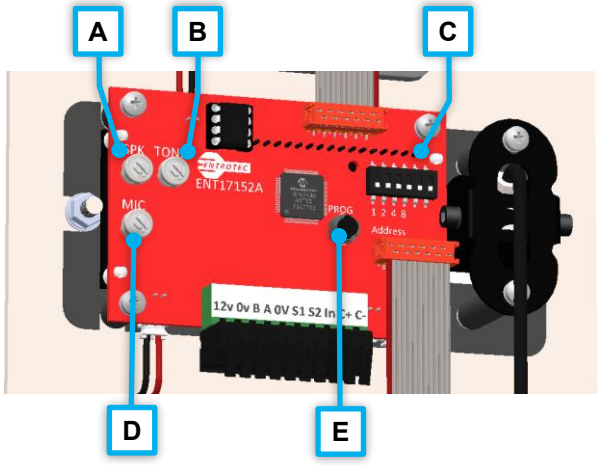


FIGURE 14

A	**VR1** - Speaker Volume: adjusts speech level
B	**VR2** - Tone Volume: adjusts tone level e.g. door open tone
C	**SW1** - RS485 Address + Options
D	**VR3** - Microphone Volume: adjusts speech volume
E	**SW2** - Programming Switch

4.2.1 SW1 - RS485 Address + Options

- Each Call Panel on a door bus must have a unique address.
- Each Call Panel on a door bus will have an associated Secure Lock Relay on the same address.
- SW1 Switches A1, A2, A4 and A8 set the binary address (0-15).
- ON = 1, OFF = 0.

Switch	A1	A2	A4	A8
Binary Value	1	2	4	8
Address 0	0	0	0	0
Address 1	1	0	0	0
Address 3	1	1	0	0
Address 7	1	1	1	0
Address 15	1	1	1	1

- Switch O1 is factory set to select button array layout.
- Switch O2 is for future use.

4.2.2 Programming Switch and Setup Menu

The programming switch enters the Call Panel to various menus that adjust both Call Panel and system wide settings, these are covered in **section 11.1**.

To enter the Setup Menu, press and hold the programming switch for 5 seconds.

5 SECURE LOCK RELAY

5.1 4 CHANNEL SECURE LOCK RELAY

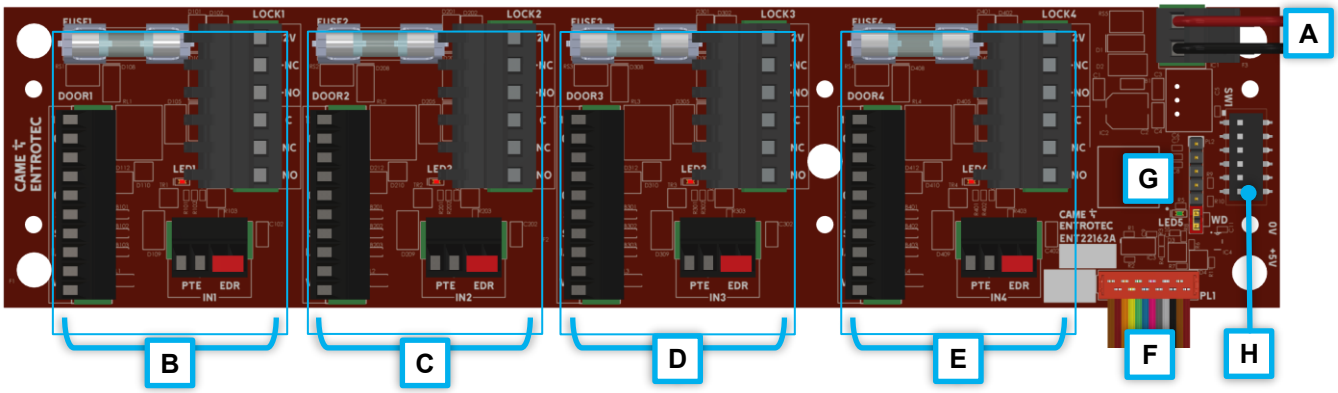


FIGURE 15 – 4 SLR WITH FACTORY FITTED CONNECTIONS

A	**DC IN** - Power Input
B	Channel 1
C	Channel 2
D	Channel 3
E	Channel 4
F	**PL2** - Pre-wired Door Bus Connections
G	**PL2** - Watchdog Link (bottom pins) and Heartbeat LED
H	**SW1** - RS485 Address + Options

5.1.1 Input + Exit Switch Connections

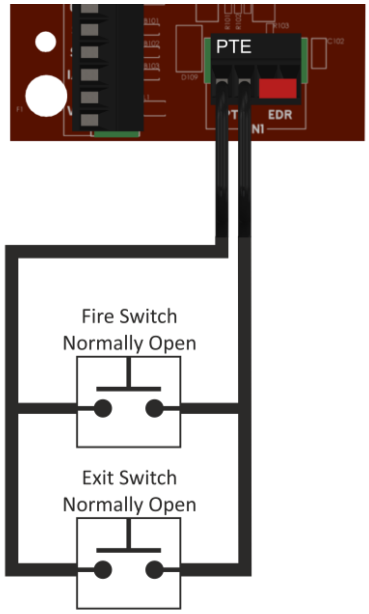


FIGURE 16

For double pole push to exit / fire switches with fail open locks, see section 5.1.2.

5.1.2 Fail Open Lock Connection

Connection for fail open locks (power to hold), e.g. magnetic locks.

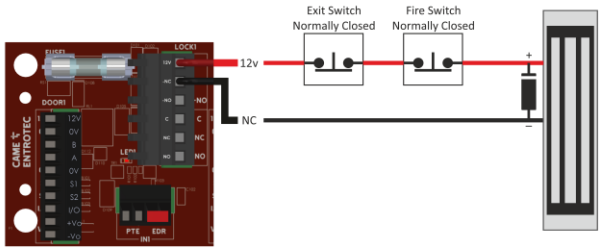


FIGURE 17

5.1.3 Fail Closed Lock Connection

Connection for fail closed locks (power to release), e.g. electric strike.

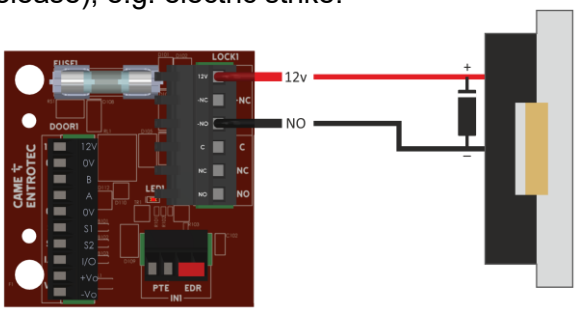


FIGURE 18

5.1.4 Emergency Door Release

For fail-safe door release operation, remove **EDR** link and connect a Volt-free Normally Closed circuit (open-circuit to unlock).

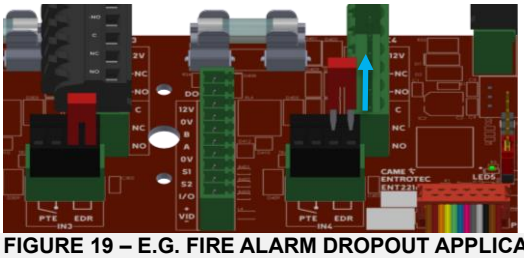


FIGURE 19 – E.G. FIRE ALARM DROPOUT APPLICATIONS

5.2 1 CHANNEL SECURE LOCK RELAY

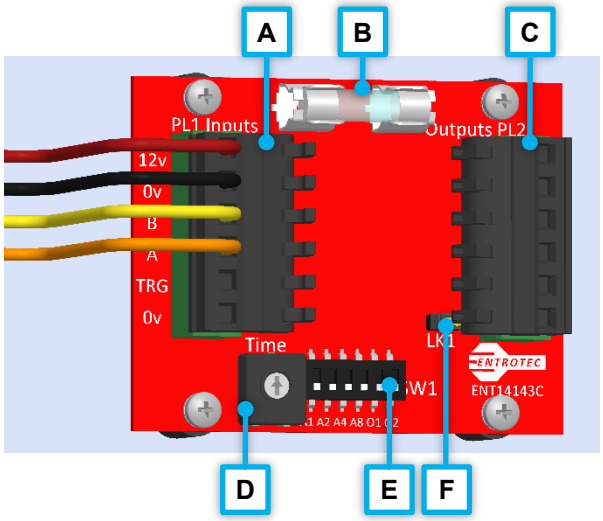


FIGURE 20 – SLR WITH FACTORY FITTED CONNECTIONS

A	**PL1** - Input Connections: Power, RS485 Data and Trigger Inputs
B	**FS1** - Lock Supply Fuse (2 Amp Time Delay)
C	**PL2** - Output Connections: Lock Supply and Relay Outputs
D	**VR1** – Unlock Time Adjustment Not Used for Call Panels
E	**SW1** - RS485 Address + Options
F	**LK1** – Tone On/Off Link, remove to disable

5.2.1 Input + Exit Switch Connections

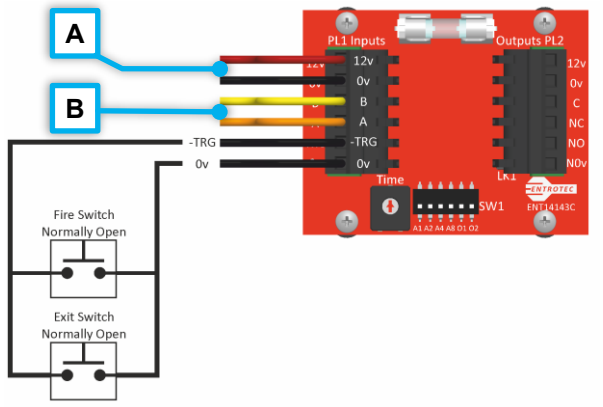


FIGURE 21

A	Connection from Power Distribution Terminal Block
B	Apex Door Bus Connection

For double pole push to exit / fire switches with fail open locks, see **section 5.2.2.**

5.2.2 Fail Open Lock Connection

Connection for fail open locks (power to hold), e.g. magnetic locks.

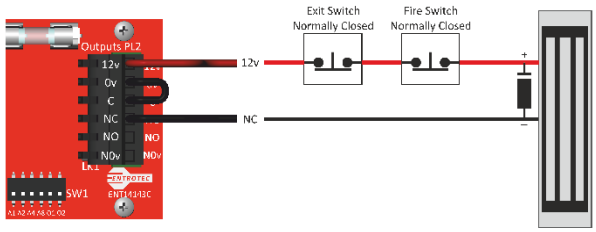


FIGURE 22

5.2.3 Fail Closed Lock Connection

Connection for fail closed locks (power to release), e.g. electric strike.

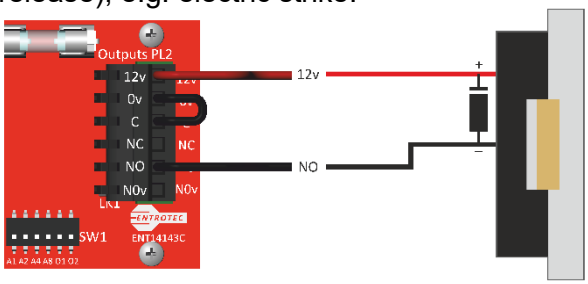


FIGURE 23

5.3 LOCK SUPPRESSION

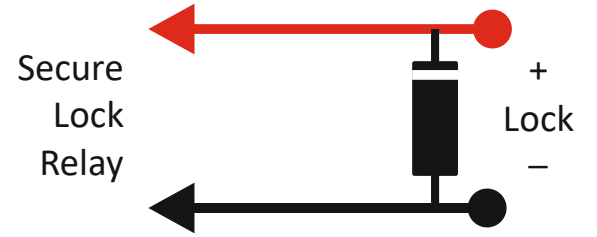


FIGURE 24 - 1N4007 DIODE FITTED AT LOCK

CAME Entrotec recommend locks with built in suppression. If such a lock is not being used it is ESSENTIAL to fit suitable suppression, as close to the lock as possible. This prevents back EMF and spikes from damaging equipment and causing erratic operation.

⚠ WARNING

Failure to fit adequate suppression may invalidate any warranty.

i SUITABLE SUPPRESSION

CAME Entrotec supply 1N4007 diodes with each Call Panel.

5.4 SECURE LOCK RELAY SETTINGS

5.4.1 RS485 Address + Options

- Each Secure Lock Relay on a door bus must have the same address as the associated Call Panel or Reader.
- SW1 Switches A1, A2, A4 and A8 set the binary address (0-15).
- ON = 1, OFF = 0.

Switch	A1	A2	A4	A8
Binary Value	1	2	4	8
Address 0	0	0	0	0
Address 1	1	0	0	0
Address 3	1	1	0	0
Address 7	1	1	1	0
Address 15	1	1	1	1

- Switch O1 is for future use.
- Switch O2 is ON for normal use and is only switched off to access certain parameters using Apex Setup software (supplied with Apex Programming Kit).

5.4.2 Unlock Time

For an entrance with a Call Panel, the unlock time is adjusted at the Call Panel by accessing the settings menu, see **section 11.1.5**.

For an entrance controlled with a separate EasiTag Reader, VR1 on the 1 channel Secure Lock Relay is used to set the unlock time, 1-60 seconds.

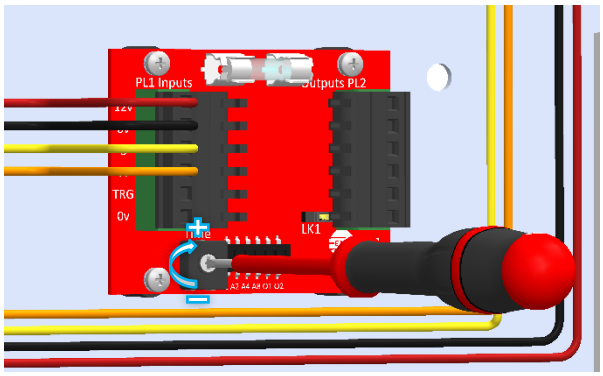


FIGURE 25

6 EASITAG READER

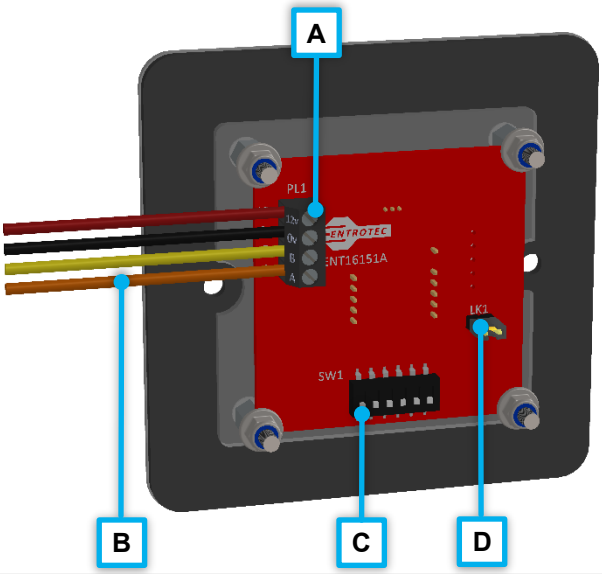


FIGURE 26 – ETA READER

A	**PL1** - Input Connections: Power, RS485 Data
B	Connection from Apex Door Bus: 12v, 0v, B, A
C	**SW1** - RS485 Address + Options
D	**LK1** – Tone On/Off Link, remove to disable

6.1 READER RS485 ADDRESS + OPTIONS

- Each Reader on a door bus must have a unique address.
- Each Reader on a door bus will have an associated Secure Lock Relay on the same address.
- SW1 Switches A1, A2, A4 and A8 set the binary address (0-15).
- Switch O1 is for future use.
- Switch O2 is OFF for normal use.

7 CONTROLLER

7.1 APEX MAIN BOARD

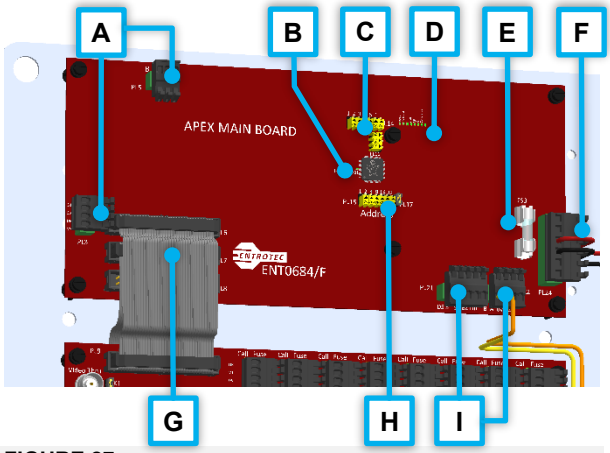


FIGURE 27

A	**PL3 + PL5** - Apex Vertical Bus Connection
B	Heartbeat LED
C	**PL14 + PL16** - Call Timer + Option Switches
D	Status LED's
E	**FS3** - Main Supply Fuse (3.15 Amp Time Delay)
F	**PL24** - Power Input and External Time-clock Connection
G	Handset Marshalling Connection
H	**PL15+ PL17** - RS485 Address Switches + Watchdog Link
I	**PL21 + PL22** - Apex Door Bus Connection

7.2 EXPANSION BOARD

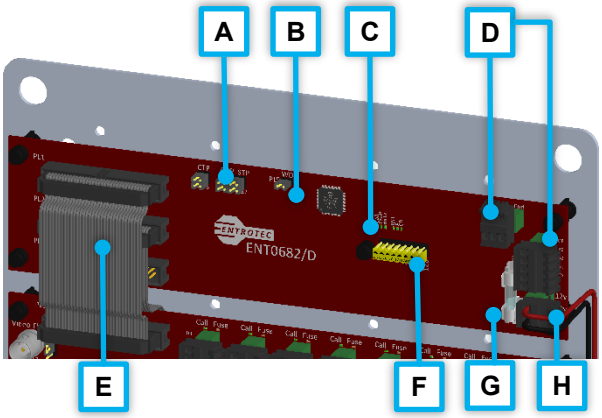


FIGURE 28

A	**PL15-PL17**- Call Timer Option Links
B	**PL5** - Watchdog Link and Heartbeat LED
C	Status LED's
D	**PL12 + PL14** - Apex Vertical Bus Connection
E	Handset Marshalling Connection
F	**PL9** - RS485 Address Switches
G	**FS1** - Main Supply Fuse (3.15 Amp Time Delay)
H	**PL13** - Power Input

7.3 CONTROLLER ADDRESSING

- Each controller on the Vertical Bus must have a unique address.
- Main Board PL15 Switches 1, 2, 4, 8, 16 and 32 set the binary address (0-63).
- Expansion Board PL9 Switches 1, 2, 4, 8, 16, 32, 64 and 128 set the binary address (0-255).

Switch	1	2	4	8	16	32	64*	128*
Binary Value	1	2	4	8	16	32	64	128
Address 0	0	0	0	0	0	0	0	0
Address 1	1	0	0	0	0	0	0	0
Address 3	1	1	0	0	0	0	0	0
Address 7	1	1	1	0	0	0	0	0
Address 15	1	1	1	1	0	0	0	0
Address 31	1	1	1	1	1	0	0	0
Address 63	1	1	1	1	1	1	0	0

ON = 1
OFF = 0

* Expansion Controller Only

7.4 APEX VERTICAL BUS CONNECTION

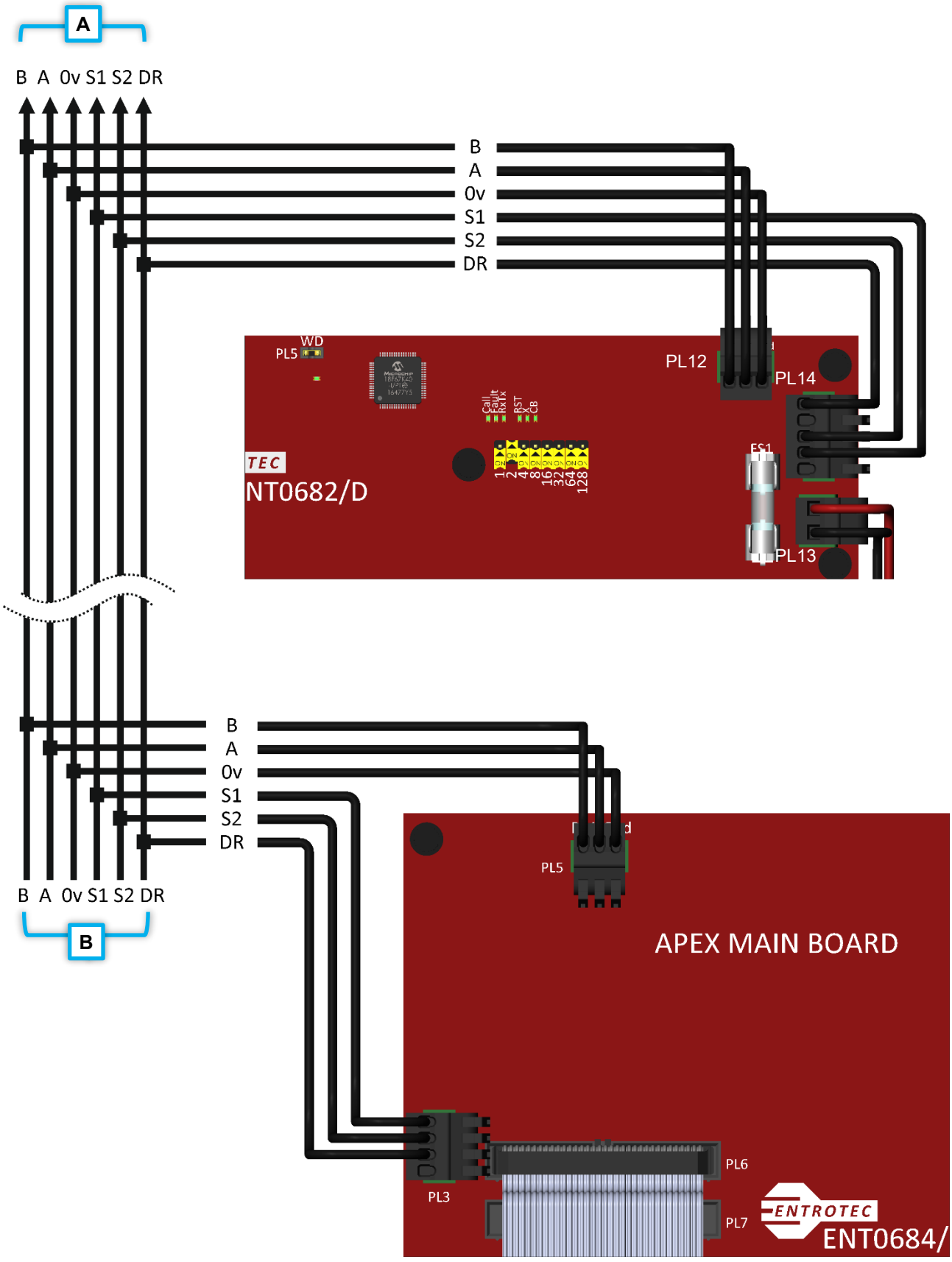


FIGURE 29

A	Vertical Bus Connection to Next Controller(s)
B	Vertical Bus Connection from Previous Controller(s)

7.5 CONTROLLER SETTINGS

7.5.1 Call Timers

Each Apex Controller has separate adjustable call time parameters:

- **Call Tone Period:** length of time the handset rings for, 20-60 seconds.
- **Call-up Period:** length of time the handset is live for when called, 20-60 seconds (this can be set longer than Call Tone Period).
- **Speech Time Period:** length of time the visitor can speak, 45-120 seconds.

The time parameters are set with options switches PL14 on the Main Board and links PL15-PL17 on the Expansion Board.

Param.	Main	Exp.	Time (Seconds)
Call Tone Period	PL14 (1+2)	PL15 (1+2)	1 off, 2 off = 20s 1 on, 2 off = 30s 1 off, 2 on = 40s 1 on, 2 on = 60s
Call Up Period	PL14 (3+4)	PL16 (1+2)	1 off, 2 off = 20s 1 on, 2 off = 30s 1 off, 2 on = 40s 1 on, 2 on = 60s
Speech Time Period	PL14 (5+6)	PL17 (1+2)	1 off, 2 off = 45s 1 on, 2 off = 60s 1 off, 2 on = 90s 1 on, 2 on = 120s

7.5.2 Main Board Option Switches

Apex Main Board have additional option switches PL16 (1-3):

- **1 - Time-clock Enable:** Switch ON to enable time-clock transmission on Door Bus.
- **2 - Daylight Savings Time Enable:** Switch ON to enable automatic British Summer Time correction.
- **3 - Auto Clear-down Enable:** Switch ON to automatically end the call a few seconds after a resident unlocks.

7.5.3 Watchdog Link

Apex Main and Expansion boards have a link to enable a supervisor circuit. This should be ON for normal use. A 'Heartbeat LED' flashes ON/OFF (at 1Hz) to indicate normal function.

8 HANDSET MARSHALLING

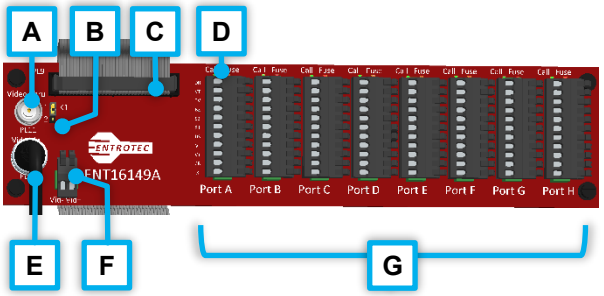


FIGURE 30

A	**PL11** - Coaxial Video Thru Output
B	**LK1** - End of Line Termination
C	**PL9** - Connection to Controller
D	Handset Port Status LED's Green = Active Call Red = Resettable Fuse Tripped
E	**PL10** - Coaxial Video Input
F	**PL12** - Twisted Pair Video Input
G	**PL1-PL8** - Handset Ports A-H

8.1 COAXIAL VIDEO CONNECTIONS

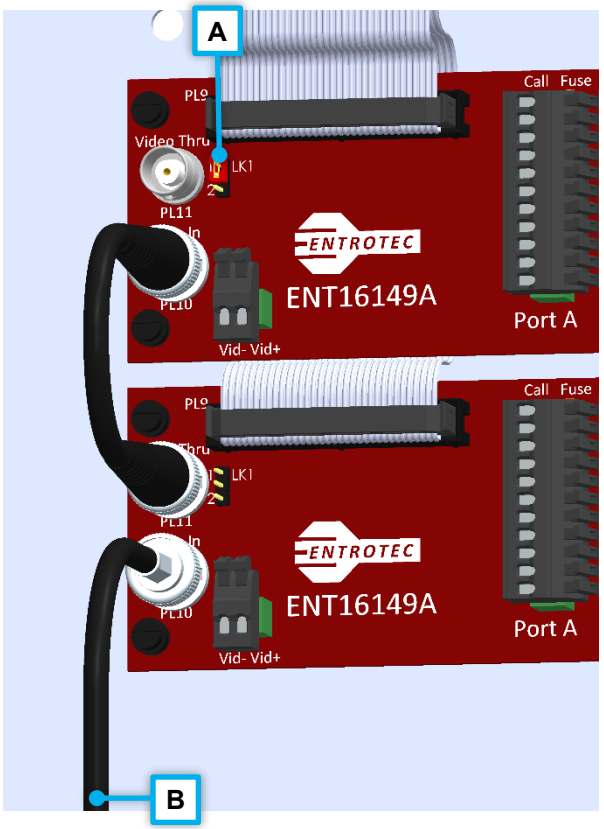


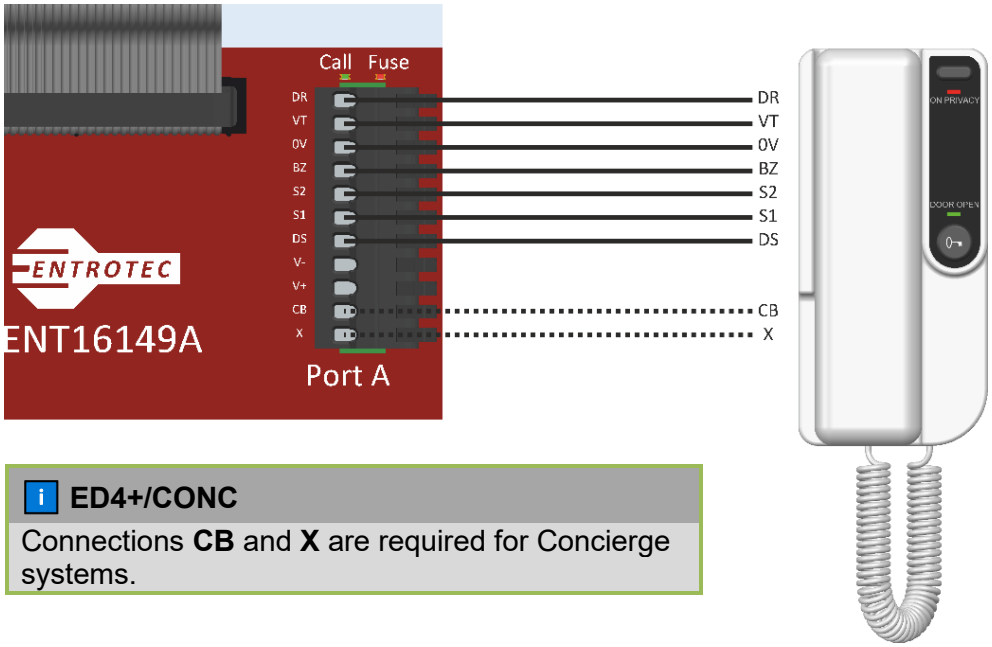
FIGURE 31

A	**LK1** - End of Line Termination, remove if Thru output is used.
B	Coaxial Video Connection from Previous Controller

8.2 HANDSET CONNECTIONS

8.2.1 ED3+ / ED4+

For suggested Colour Code, see **section 12.2.3**



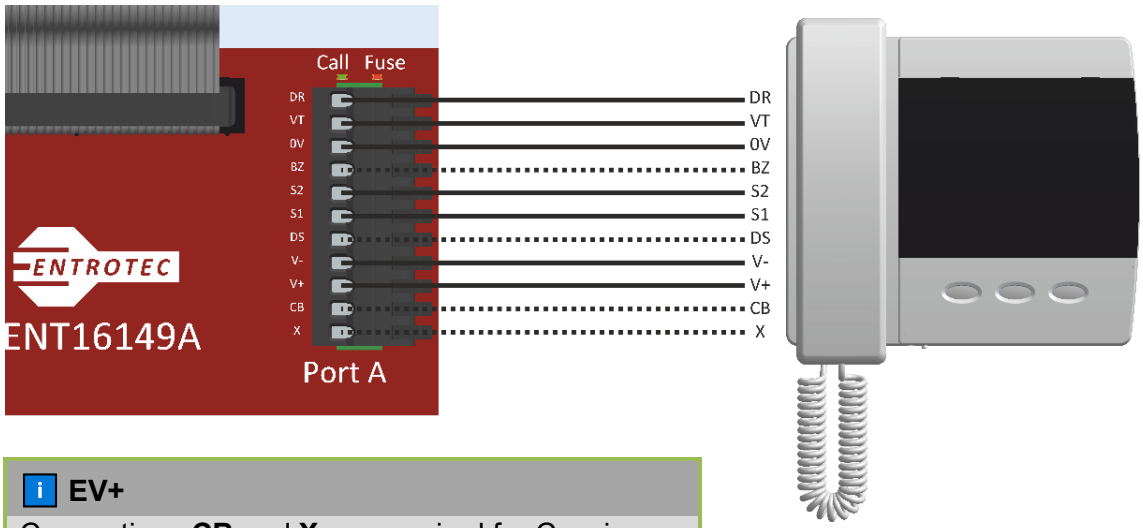
ED4+/CONC

Connections **CB** and **X** are required for Concierge systems.

FIGURE 32

8.2.2 EV / EV+

For suggested Colour Code, see **section 12.2.4**



EV+

Connections **CB** and **X** are required for Concierge systems.

FIGURE 33

USING WITH 4 PAIR CABLE

If **DS**, **CB** or **X** is required the internal ringer can be enabled and the **BZ** connection is not required.

9 VIDEO DISTRIBUTION

Video is distributed between controllers on a daisy-chain.

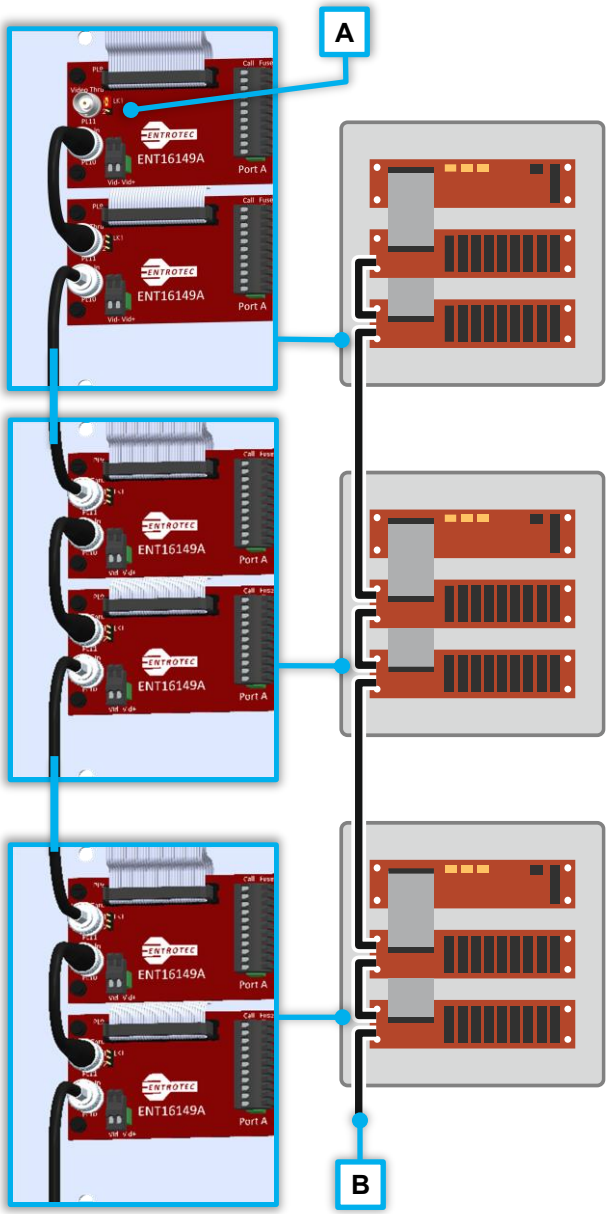


FIGURE 34

A	**LK1** - End of Line Termination Fitted on Last Board.
B	Coaxial Video Connection from Video Switch or Previous Controller

10 VS4 VIDEO SWITCH

On systems with more than 1 Call Panel, the VS4 switches the video from the active panel to the rest of the system. This is triggered with the Apex Door Bus Connection.

Each Call Panel on the Door Bus has an associated input on the VS4, corresponding to the RS485 address.
E.g. Panel 1 = Input A, Panel 2 = Input B, etc.

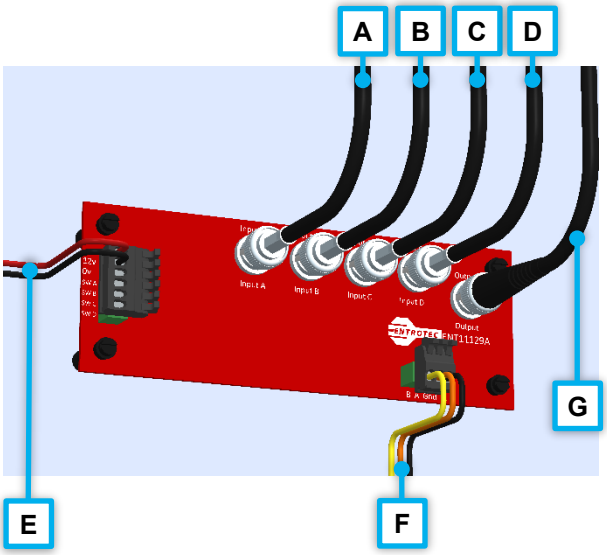


FIGURE 35

A	**PL1** - Coaxial Video from Panel 1
B	**PL2** - Coaxial Video from Panel 2
C	**PL3** - Coaxial Video from Panel 3
D	**PL4** - Coaxial Video from Panel 4
E	**PL6** - Power Input
F	**PL8** - Apex Door Bus Connection
G	**PL6** - Coaxial Video Output to Marshalling

11 SYSTEM SETUP

11.1 CALL PANEL SETUP MENU

11.1.1 Entering the Menu

To enter the Setup menu, press and hold the programming switch on the Call Panel PCB (Figure 14) for 5 seconds.

If the Call Panel has an EasiTag reader, present the EasiTag Programming Card 3 times.

11.1.2 Navigating the Menu

Use the Call Panel buttons to Scroll through the menu.

To confirm or enter the selected option, press the programming switch or press Call (digital panels only).

To cancel or exit the selected option, allow the panel to time out or press Cancel (digital panels only).

11.1.3 Menu Structure

- **Settings**
  - Autocall
  - Unlock time
  - Language
  - Voice Vol.
  - Mode
- **Commission**
  - Set target
  - Edit target
  - Save changes
- **Codded access**
  - User codes
  - Prog. code
  - Trades code
- **Timeclock**
  - Set date
  - Set time
  - Time profile 1
  - Time profile 2
  - Current time

i AVAILABLE OPTIONS

Menu may differ depending on panel type.

11.1.4 Autocall

This sets the feature ON or OFF. Autocall automatically places a call after the visitor has dialled at the panel. There is no need to press Call. When this feature is enabled, any button will clear down the call.
Navigate to **Settings > Autocall**

- **On**
- **Off**

Press **Call** to store.

11.1.5 Unlock Time

This sets the length of time the entrance is unlocked for once triggered 1-60 seconds.
Navigate to **Settings > Unlock Time**

- **1 second**
- **…** (1 second increments)
- **60 seconds**

Press **Call** to store.

11.1.6 Language

This sets the default language. When the Multiple Language Feature is enabled, the scroll button is used to select a language.
Navigate to **Settings > Language**

- **English Only** - Locked to English
- **English Multi** - Multiple Language enabled, goes to English on idle.
- **French Multi** - Multiple Language enabled, goes to French on idle.
- **German Multi** - Multiple Language enabled, goes to German on idle.
- **Spanish Multi** - Multiple Language enabled, goes to Spanish on idle.

Press **Call** to store.

11.1.7 Voice Volume

This sets the volume for the optional Voice Over Module (VOM). Refer to VOM Installation Guide.

11.1.8 Mode

Factory set, do not adjust.

11.1.9 Commission

This feature allows flat numbers to be programmed or re-programmed in system.

Prior to use, note the RS485 address of each controller and which flat numbers are to be programmed to each controller.

Each controller has 24 possible slots, even if there are 8 or 16 handset ports, slots 1-24 will be available. Unused slots are programmed as empty.

Navigate to **Commission > Set Target**

> Enter the Target Controller Address.
> Press **Call**

The existing flat numbers are downloaded and the panel will enter **Edit Target** mode starting at slot 1 of 24.

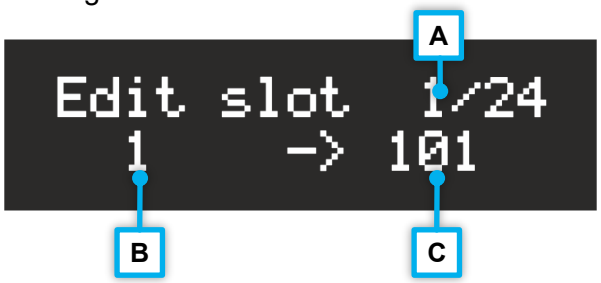


FIGURE 36

A	Slot Number
B	Existing Flat Number
C	New Flat Number

> Enter the new flat number
> Press **Call** to jump to the next slot.
  - To program a slot as Empty, press **Call** without entering a new flat number.
> Repeat for each of the 24 slots.

Once all 24 slots are programmed, the panel will prompt to **Save Changes**.

Press **Call** to write the new flat numbers to the target controller.

11.1.10 Coded Access

Digital Call panels have coded access feature as standard, allowing a user access by entering a secret code.

There are 9 programmable User Codes and 1 programmable timed / trades entry code, these can be easily re-programmed at the panel using the Prog. code.

⚠ DEFAULT CODES

It is strongly recommended that the codes are changed from default.

Navigate to **Coded access > Prog. code**

> Enter the current Prog. Code
  - Default = 1, 2, 3, 4, 5, 6
> Press **Call**
> Enter a new Prog. Code
> Press **Call** to store.

Navigate to **Coded access > User codes**

> Enter the Prog. Code
> Press **Call**
> Select a code slot: 1-9.
> Press **Call**
> Enter a new User Code
  - To delete a code, press **Call** without entering a new code.
> Press **Call** to store.

Navigate to **Coded access > Trades code**

> Enter the Prog. Code
> Press **Call**
> Enter a new Trades Code
  - To delete, press **Call** without entering a new code.
> Press **Call** to store.

i CODES AFTER SETUP

To unlock: press **Call**, enter a user code, then **Call**.
To enter the **User codes** menu: press **Call**, enter the Prog. code, then **Call**.

11.1.11 Timeclock

Apex has a built-in real-time clock with automatic British Summer Time correction, battery backup and 2 separate time profiles.

The date, time and time profile settings are system wide and only need to be setup once. However, the function that each panel uses for both times profile must be set separately.

Navigate to **Timeclock > Set Date**

- > Use the Call Panel buttons to increment the selected parameter (shown with blinking cursor).
- > Press **Call** to move the cursor to the next parameter.
  - ○ On the last parameter (Year), **Call** will store the new date.

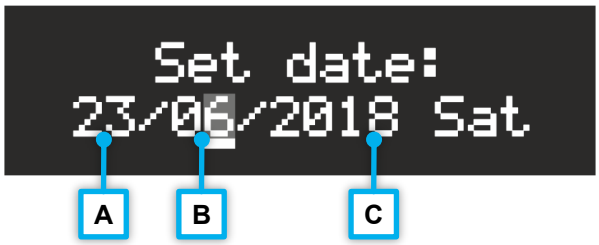


FIGURE 37 - SET DATE MENU SHOWING MONTH SELECTED

A	Date
B	Month (shown selected with cursor)
C	Year

Navigate to **Timeclock > Set Time**

- > Use the Call Panel buttons to increment the selected parameter (shown with blinking cursor).
- > Press **Call** to move the cursor to the next parameter.
  - ○ On the last parameter (Minutes), **Call** will store the new time.

FIGURE 38 - SET TIME MENU SHOWING HOUR (TENS) SELECTED

Navigate to **Timeclock > Time profile 1**

- > Use the Call Panel buttons to increment the selected parameter (shown with blinking cursor).
- > Press **Call** to move the cursor to the next parameter.
  - ○ On the last parameter (Function), **Call** will store the Time Profile.

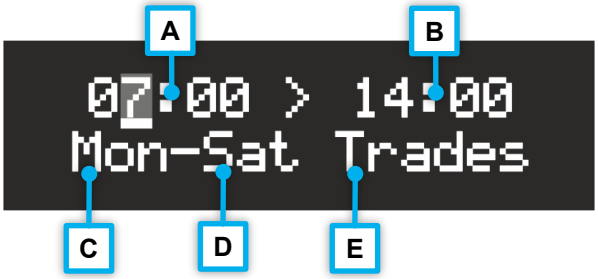


FIGURE 39 - TIME PROFILE MENU SHOWING START TIME SELECTED

A	Start Time
B	End Time
C	First Day
D	Last Day
E	**Function:** **Trades** (Trades Period) **Voice** (used to enabled Voice Over Feature at certain times to avoid disturbance) **Off** (Disabled)

Figure 39 shows a Trades Period active 7am-2pm - Monday to Saturday

To verify settings and see which profiles are active, navigate to **Timeclock > Current Time**

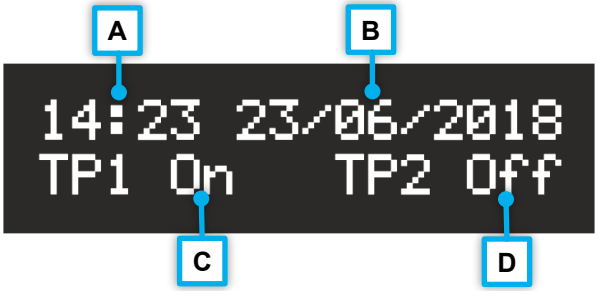


FIGURE 40

A	Current Time
B	Current Date
C	Time Profile 1 Status
D	Time Profile 2 Status

12 CABLE COLOUR CODES

12.1 UTP COLOUR SEQUENCE

CAME Entrotec's suggested colour code typically follows the industry standard colour sequence.

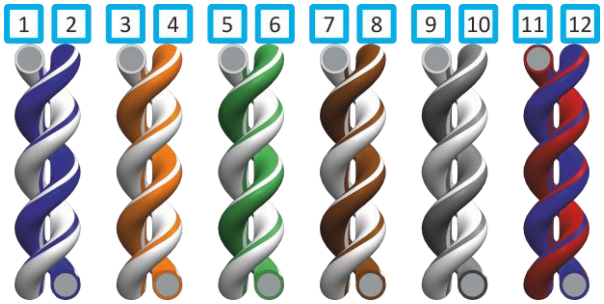


FIGURE 41 - COLOUR CODE PAIRS 1-6

Wire	Colour CW1308	Colour Cat5/5e/6
1	White/Blue	White/Blue
2	Blue/White	Blue
3	White/Orange	White/Orange
4	Orange/White	Orange
5	White/Green	White/Green
6	Green/White	Green
7	White/Brown	White/Brown
8	Brown/White	Brown/White
9	White/Grey	
10	Grey/White	
11	Red/Blue	
12	Blue/Red	

12.2 SUGGESTED COLOUR CODES

12.2.1 Apex Door Bus

Wire	Colour	Connection
1	White/Blue	B
2	Blue/White	A
3	White/Orange	0v
4	Orange/White	S1
5	White/Green	S2
6	Green/White	DR (In)
7	White/Brown	Video + (Future)
8	Brown/White	Video - (Future)

12.2.2 Apex Vertical Bus

Wire	Colour	Connection
1	White/Blue	B
2	Blue/White	A
3	White/Orange	0v
4	Orange/White	S1
5	White/Green	S2
6	Green/White	DR

12.2.3 Audio Handsets

Wire	Colour	Connection
1	White/Blue	DR
2	Blue/White	VT
3	White/Orange	0v
4	Orange/White	BZ
5	White/Green	S2
6	Green/White	S1
7	White/Brown	DS
8	Brown/White	CB (as required)

12.2.4 Video Handsets

Wire	Colour	Connection
1	White/Blue	DR
2	Blue/White	VT
3	White/Orange	0v
4	Orange/White	BZ, CB or DS (as required)
5	White/Green	S2
6	Green/White	S1
7	White/Brown	V-
8	Brown/White	V+

i SPARE CORES

It is good practice to connect any spare cores to 0v at either end of the cable.

CAME ENTROTEC

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