

# **Bell System (Telephones) Ltd.**

***bellissimo***

**Video Door Entry System  
Digital Panel  
Installation & Operation Manual**

**This manual applies to the following : –**

**BSD-DIG Digital Door Controller – Version 1 Build 2**

*Build 1 has minor differences, if in doubt call*

**BS Colour Videophone – Version 1 Build 1**

**BSA Audio Phone – Version 1 all builds**

**BSC4 Video Controller – Version 1 Build 3**

# bellissimo Digital Video Entry System

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# **bellissimo Digital Video Entry System**

## **Introduction**

### **Description**

A *bellissimo* video door entry system consists of a door panel, positioned at the entrance of a building, video telephones (videophone), placed inside of the building for the convenience of the occupants and a power supply and controller which are usually located inside an electrical cupboard. The door panel comprises of a two-way speech unit, a camera, an LED display and sixteen push buttons – which are used by a visitor to initiate a call. The videophone, which rings in response, allows a two-way conversation via a handset whilst the caller can be observed through the integral display. The operator can selectively allow visitors access to the building by pressing a button on the videophone and so electrically releasing the door.

The *bellissimo* digital video door entry system is suitable for any building or entry point requiring to address a number of flats where a standard panel would be larger or more expensive, this is typically from 16 flats upwards.

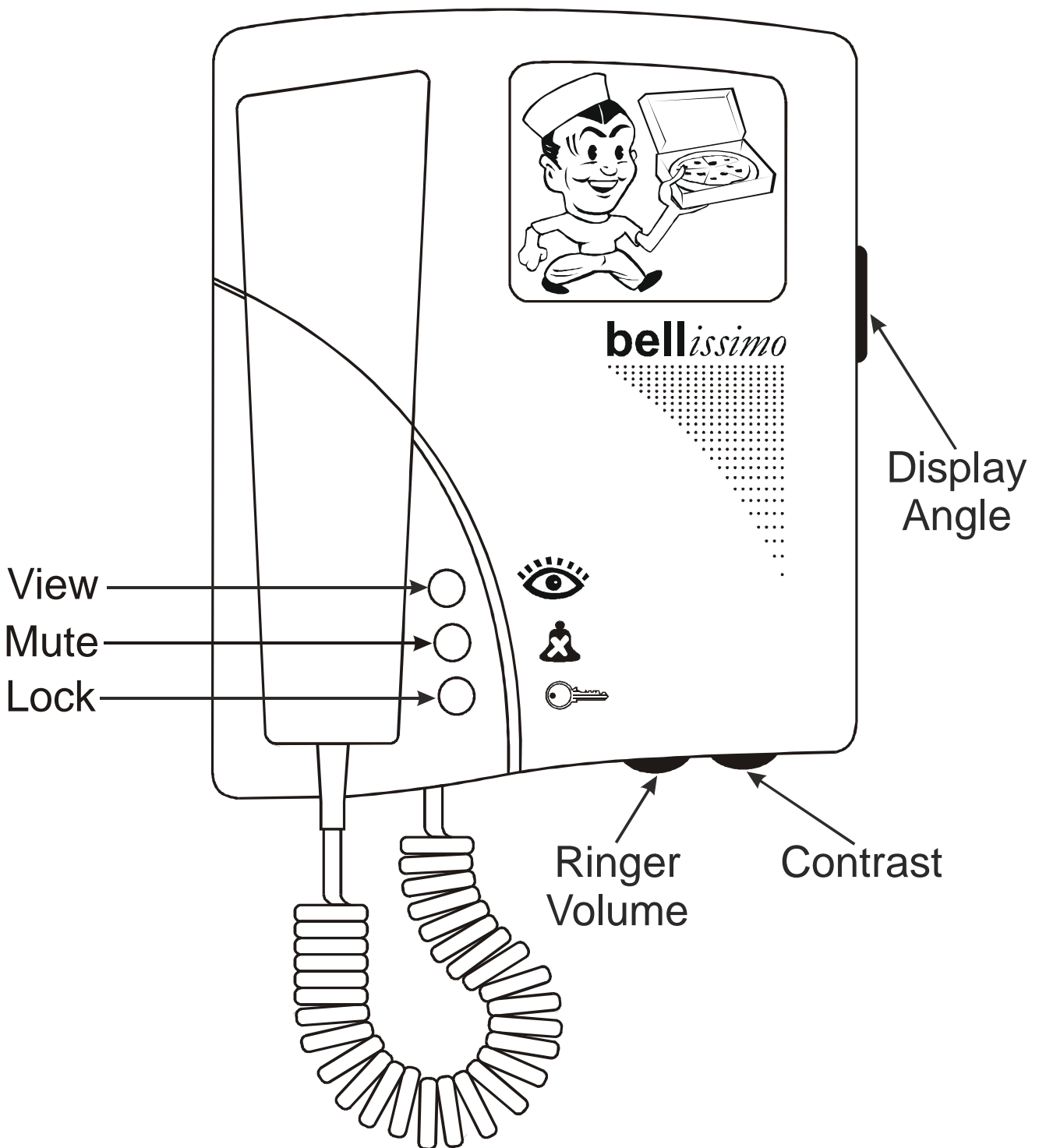
The *bellissimo* digital system is supplied with a dedicated door controller, for each entrance, and a video controller for every four videophones. The basic system supports 1 videophone per address, and up to 3 extension videophones (more with additional power supply's). Multiple entrances can be supported with the addition of one panel and one door controller for each entrance.

### **Main Features**

- Cat5 cable throughout; no co-ax required!
- 3.5" Flat screen high resolution TFT colour display.
- High resolution CCD colour day/night camera with infrared lamps.
- 12V d.c. operation
- High quality full-duplex speech amplifier.
- Automatic picture display while ringing.
- Ringer mute function.
- Ringer volume control.
- Fail safe or fail secure lock releases and magnetic locks (maglock).
- Lock release timer.
- Tradesman facility (optional).
- Facility for exit button and/or fire switch.
- Door 'left open' indication.
- Second camera option.
- Up to 3 extension videophones per flat.
- Multiple entrances supported.

# bellissimo Digital Video Entry System

## bellissimo Colour Videophone

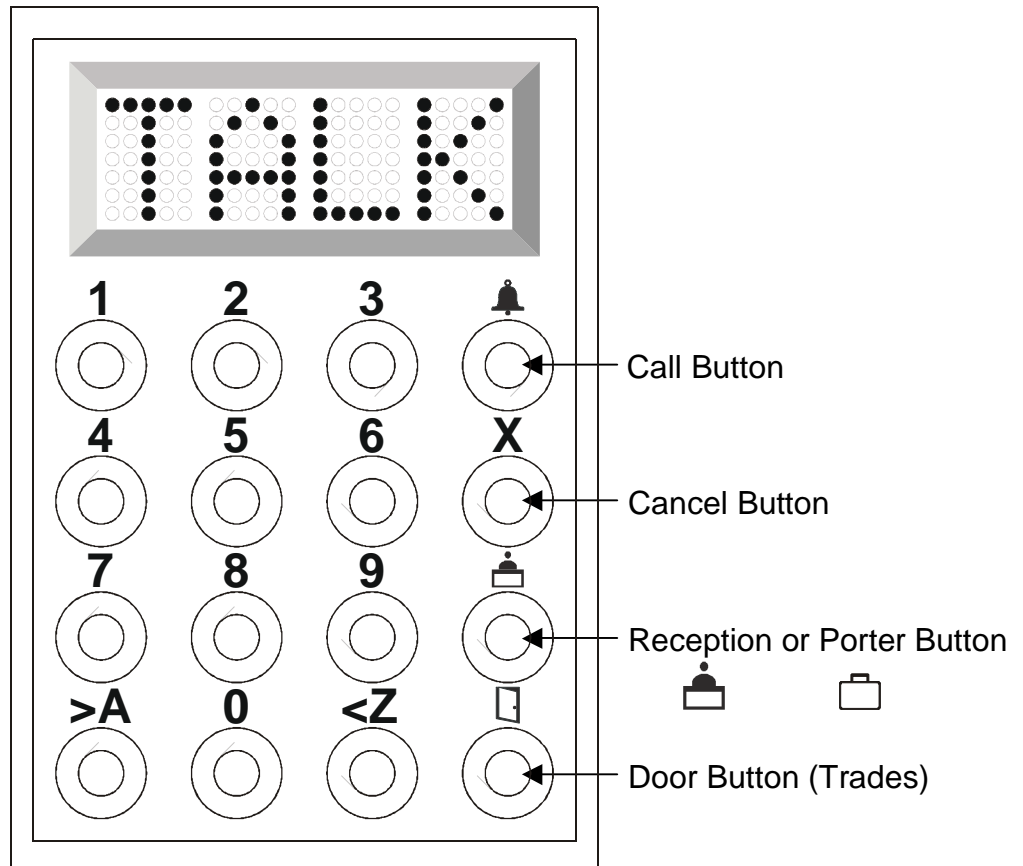


Button	Lamp	Steady	Flashing
<b>View</b> / camera select	Amber	Call in progress	Ringing
<b>Mute</b> on/off	Red	Videophone is muted	Videophone is off-hook
<b>Lock</b>	Green	Door is open	Press to release lock

# bellissimo Digital Video Entry System

## Basic System Operation

### Panel Controls



### Number and Letter Buttons

The numbers 0 to 9 are used to enter numbers. The letter button >A enters letters beginning with A and each press advances through the alphabet, while the letter button <Z does the reverse starting with Z. For example pressing >A three times will give C then pressing <Z once will give B, or starting with Z; pressing 5 times will give V and then pressing >A twice will give X.

The **call** button is used to call flats or acts as a **bell** button calling the **reception** phone.

The **cancel** button cancels the current entry leaving a blank display.

The **reception** (AKA Porter or Concierge) button calls a pre-defined phone dedicated to that location.

The **door** or Trades button is used to gain direct access either directly or via a code.

### Call sequence

When the resident's address is entered followed by the **call** button the addressed videophone will ring and its amber **view** lamp will flash. The videophone will continue to ring for up to 30 seconds or until the resident responds by picking up the handset. At this time the resident can freely converse with the visitor whose image is now displayed on the videophone; at the same time the green **lock** lamp will flash to highlight the **lock** button.

The call may be terminated by replacing the handset or more usually by pressing the **lock** button first to allow the visitor access through the entrance; the speech and picture will persist for a further 3 seconds while the door is being released.

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## Videophone Controls

The diagram in the introduction shows the standard colour monitor and its controls. The default setting is ringer volume maximum (slide finger to left) and contrast midway. The slider on the right hand side alters screen angle.

The interim colour C-BS videophone does not have a ringer volume control.

The older monochrome monitor had Contrast and Brightness controls.

## Auto Display

When 'Auto Display' mode is selected the picture will come on while the videophone is ringing, otherwise the picture will only come on when the call is answered. Auto Display mode is usually pre-selected at installation and generally only one videophone will be set in this mode (see 'Extension Videophones' below).

## Call Mute

The resident can mute the ringing sound in the videophone when they do not wish to be disturbed. Call mute is activated by pressing the **mute** button on the videophone, which then illuminates in red as a reminder. The handset must be on the hook for this to work. Pressing the **mute** button a second time will disengage the mute function. During installation it is possible to set a time limit for the mute function in various values from 2 minutes up to 10 hours or indefinitely. When this time period has elapsed the mute function will automatically disengage. (See 'mute timer', page 23).

The mute feature can be set during installation to one of two modes (or disabled altogether): -

**Ringer Mute** only stops the audible ring, but the amber **view** light will still flash and all other functions work normally. Ringer mute will continue for the preset time even if a call is answered. Pressing the **mute** button again while the videophone is idle will cancel the mute function.

**Full Mute** prevents the videophone both from ringing or flashing the amber **view** lamp. Pressing the **mute** button again or lifting the handset will cancel the full mute function.

## Silent viewing

When the videophone is ringing the resident can press the **view** button to answer the call instead of lifting up the handset; this will stop the videophone ringing and enable them to view the visitor for up to 60 seconds or until they press the **lock** button to release the door. Silent viewing can be 'normalised' at any time by picking up the handset and conversing with the visitor as described above.

## Door Status Indication

The green **lock** lamp on the videophone will illuminate to warn the resident that a door has been left open following a call. This feature requires a door monitor contact to be fitted.

## Call Privacy

Once a call has been made from an entrance panel only the videophone(s) which is/are ringing may answer the call. Once answered, if another videophones handset is picked up, or the **view** button is pressed, the videophone will not activate (including extensions of the active videophone).

# bellissimo Digital Video Entry System

## User Activation (CCTV Mode)

User activation is a feature of the *bellissimo* 1 way system and is not available on digital systems. User activation is generally not recommended on larger systems as the conflicting demands of residents and callers can result in confusion and erroneous fault reports.

## Cameras

The door controller has the capability of receiving the signal from a second panel camera (e.g. DDA) or 'third party' 'CCTV' camera, which is located nearby, and offering a different viewpoint. Pressing the **view** button will alternate the view between camera 1 and camera 2 (if enabled).

Note. The camera to controller wiring has termination options which allow for connections to other video equipment. See the Options Diagram on page 35 for details.

## Extension Videophones

Additional videophones may be added to each 'flat'. The number of extensions is limited only by power supply considerations. All videophones for that 'flat' will ring when called however typically only the master unit will display a picture while ringing. Once the master or extension videophone is 'picked-up' the picture will display on that unit alone.

It should be noted that when the master unit is left off-hook, extension videophones will not ring; the red light will flash on the master as a warning of this condition. (This no longer applies after colour videophone version 2 build 2).

## Lock Type

The door controller supports both fail-secure and fail-safe locks including magnetic locks of up to 1A rating. The lock time may be programmed between 1 and 99 seconds. (See 'Lock Type' and 'Lock Duration' and on page 19.)

## Exit Button and Fire Switch

An input is provided for an exit button, which can be installed on the inside of the door and allow residents to exit freely. Momentary operation of this button will operate the lock release for the programmed lock time. A Fire switch or other override device may use the same input to hold the door open indefinitely. . Note. Fail secure locks must be continuously rated.

## Trades Facility

The trades facility is accessed by pressing the **door** button. An optional time clock may be used to allow one function during the programmed time(s) and another at all other times.

These functions can be: - unlock the door, ask for an entry code or ignore the button press.

## DDA Functionality

The *bellissimo* digital video system has a range of options for entrance panels to help meet the requirements of the Disability Discrimination Act (DDA), including Illuminated Tactile buttons. Contact your sales representative for further details.

## Multiple Entrances

The *bellissimo* system allows multiple entrances to be catered for by the addition of a door controller and entrance panel for each entrance and additional power supplies.

# ***bellissimo* Digital Video Entry System**

## **Gate and Block Systems**

Sites with two or more blocks sharing one or more site entrances are catered for with our BSSW controller. The blocks can then work independently but will receive calls from the shared entrance.

For further details see the “*bellissimo* and Bellcall Manual Gate and Block (PD-120)”.



# bellissimo Digital Video Entry System

## Design Considerations

### Equipment List

A bellissimo digital video system comprises the following: -

Model No	Description
N x BS	Videophone (N is the no of phones)
1 x BSP-DIG/LCP -OR-	Vandal resistant panel with a model 61 speech unit, camera, VR buttons and LED display.
1 x BSP-DIG/VR(S)	Vandal resistant panel with a model 61 speech unit, camera, VR buttons and LED display. Flush or surface mounting
1 x BSD-DIG	Door controller
M x BSC4	Video controller (one required for every 4 ways = N/4 rounded up)
K x PS4	4A 12V power supply. (one required for every 8 to 16 ways)
1 x 203	Fail-secure lock release, alternate types available.

### Options

The following options are available: -

- Extensions model **BS** videophone(s).
- Audio only phones model **BSA** as extensions.
- Additional entrances, each comprising a **BSD-DIG** controller and **BSP-DIG** panel. (See also power supply requirements).
- Alternate lock releases, fail-safe and fail-secure.
- Timed Trades facility; specify a model **TS2000-BST** time-clock.
- Exit button. Model **5077** surface and model **5078** flush versions are available.
- Battery back up power supply, **Model 840** (12V 4A).
- DDA panels (Contact sales for further information).

### Entrance Panel – Important Note

Careful consideration should be given to the location of the entrance panel to ensure the best possible lighting conditions for the camera. In general strong back lighting of the subject (by the sun and sky) should be avoided, as the contrast between foreground and background may be too great for the camera. The field of view should contain as little of the sky as possible, particularly if south facing. If a backlit situation is unavoidable, additional lighting may be necessary to illuminate the caller and avoid a dark outline image (silhouette). A light coloured or reflective surface around the panel will redirect backlight to illuminate the caller.

### Door Controller

The door controller and power supply should be wall-mounted in a convenient cupboard or other protected environment with available mains power. Cable length to the entrance should be less than 50m. The door controller for the second and subsequent entrances may be situated in the same location, or to meet the 50m requirement may be situated in another location. Power supplies may be shared between door controllers placed in the same location, but controllers in separate locations must be separately powered.

# **bellissimo Digital Video Entry System**

## **Video Controller**

The video controller(s) and power supply(ies) should be wall-mounted in a convenient cupboard or other protected environment with available mains power. Cable length to the videophone should be less than 150m, see 'Cable Distances' page 12. In many cases the video controllers will be in the same location as the door controller(s), but they may be distributed as required to reduce wiring distances. When placed in different locations, each location must have its own local power supplies.

## **Gate Controller**

The gate switch controller BSSW is wired between the block door controllers and the video controllers, so would normally be wall mounted next to a door controller.

For further details see the "bellissimo and Bellcall Manual Gate and Block (PD-120)".

## **Separately Powered Videophones**

The limitation of up to 4 videophones ringing but only one displaying, as indicated in the power supply and cable distance tables on page 13, can be overcome by the use of supplementary power from a 340C.

## **Power Supply Requirements**

The system is powered by 12V power supplies only: -

Model PS4 12V, 4A.

Model 840 12V, 4A battery backup supply.

Model 340C 12V, 1.5A optional for extensions.

Note 1. The 28V referred to on the videophone, video controller and wiring diagrams is internally generated in the controller. DO NOT use any power supply other than 12V or damage may occur.

Note 2. The PS4 power supply has been specifically designed to operate with the high-surge requirements of the system. Bell System is unable to guarantee functionality or provide support for systems which use third party power supplies.

# bellissimo Digital Video Entry System

Exact power supply requirements depend upon many factors. The number of power supplies included within a standard 'kit' or quotation assumes that all controllers are installed in one location and that there are no extensions.

The following table gives examples of the minimum number of controllers and power supplies for a given number of entrance doors and flats.

System	Control Equipment and Power Supplies
1 door 16 flats	1 x BSD-DIG door controller for digital panel 4 x BSC4 video controller 2 x PS4 12V 4A power supply
1 door 20 flats	1 x BSD-DIG door controller for digital panel 5 x BSC4 video controller 2 x PS4 12V 4A power supply
1 door 36 flats	1 x BSD-DIG door controller for digital panel 9 x BSC4 video controller 3 x PS4 12V 4A power supply
2 door 36 flats	2 x BSD-DIG door controller for digital panel 9 x BSC4 video controller 4 x PS4 12V 4A power supply

Distributed installations will typically require more power supplies. Also the use of other equipment such as coded access or proximity readers must be taken into account.

The following table is a guide to how much equipment a PS4 power supply can safely and reliably feed, please contact technical support for other variations.

Equipment 1 x PS4 can power	Comments
4 x BSC4 video controllers with 1 BS videophone per output.	16 videophones directly powered. Extensions may be added if separately powered by 340C's.
2 x BSC4 video controllers with 2 to 4 BS videophones per output.	Extension phones must be set to ring only, use the above configuration to allow the extensions to have a picture while ringing.
1 x BSD-DIG door controller and 2 x BSC4 video controllers with 1 BS videophone per output	8 videophones directly powered. Extensions may be added if separately powered by 340C's.
1 x BSD-DIG door controller and 1 x BSC4 video controllers with 2 to 4 BS videophones per output	Extension phones must be set to ring only, use the above configuration to allow the extensions to have a picture while ringing.
2 x BSD* door controllers (any type) with up to 2 cameras and 1A fail safe locks.	Both door controllers must be in the same location. No spare current available for other equipment unless both cameras or all the lock current is not used.

# bellissimo Digital Video Entry System

## Cable Specification

All system wiring must be carried out using **Cat5** signal cable and where necessary 1mm<sup>2</sup> (or greater) power cable as tabulated below. Cat5 cable has a known performance for the transmission of video signals, whilst telephone or alarm cables are not suitable.

**Bell System will be unable to offer any warranty or support for systems installed using incorrect cables.**

## Cat5 Cable Specification

Cat5 is our short reference for EIA standard UTP Category 5 Unshielded Twisted Pair data cable. This is a standard solid core twisted pair cable having 4 pairs (8-cores) and no shield. The cores are in pairs where Blue and 'Blue with a White stripe' are twisted together as the first pair. The other three pairs are similar with main colours Orange, Green and Brown.

- Also available and acceptable are:

UTP Category 5e (Cat5e)

UTP Category 6 (CAT6)

UTP Category 6e (CAT6e)

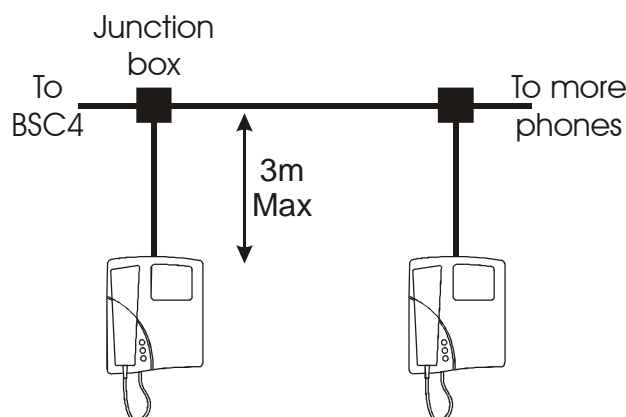
The exact cable can be chosen from the above on cost and availability grounds.

- STP (Shielded Twisted Pair) cables are **not** recommended.
- UTP "patch cables" are **not** recommended.

NOTE: Cat5 cable is easily identifiable as the specification is printed on the sheath

Patch cable is used for the desk phone to wall connection as this requires a flexible cable. The reason for not using it for general wiring is that attenuation is higher and video distances would be reduced by at least ½, it also costs 2 to 3 times as much as standard Cat5.

Spurs. A daisy chain run with one or more spurs of up to 3 metres is allowed. For example a desk phone connection.



# bellissimo Digital Video Entry System

## Cable Distances – Version 2 Colour Videophones

Video Controller to Colour Videophone			
System	Distance	Cable	Comments
Single videophone per output or first videophone	< 150m	1 x Cat5	.
	> 300m	1 x Cat5 2 x 1mm <sup>2</sup>	
Single videophone + 3 extensions on each output, all cable powered	< 50m	1 x Cat5	Only Master videophone has 'Auto display'; extensions are daisy-chained
	< 200m	1 x Cat5 2 x 1mm <sup>2</sup>	
Single videophone per output with separately powered extensions	< 150m	1 x Cat5	150m maximum to the cable powered videophone; daisy-chain up to 300m total.
	> 300m	1 x Cat5 2 x 1mm <sup>2</sup>	
All videophones locally powered with a 340C power supply	< 300m	1 x Cat5	Locally powered videophones have 'Auto display'; extensions are daisy-chained
	<25m to 340C	1 x pair of Cat5	
	<100m to 340C	2 x 1mm <sup>2</sup>	

Door Controller to Video Controller(s)			
System	Distance	Cable	Comments
All Systems	<200m	1 x Cat5	N.B. maximum length from any camera to any videophone must be less than 300m

Panel to Door Controller			
System	Distance	Cable	Comments
All Systems, each entrance	<50m	1 x Cat5	Speech and video only
BSP-DIG/LCP	<50m	1¾ x Cat5	Doubled up power
BSP-DIG/VR(S)	<50m	1¾ x Cat5	Doubled up power
Lock Release up to 1A	<10m	¼ x Cat5	
	<50m	2 x 1mm <sup>2</sup>	
Option: Exit button	<50m	¼ x Cat5	
Option: Door Monitor Switch	<50m	¼ x Cat5	

Power Supply to Controller			
System	Distance	Cable	Comments
All Systems, each PS4 to BSD-DIG or BSC4	<3m	2 x 1mm <sup>2</sup>	Total length of any daisy chain
	<5m	2 x 1.5mm <sup>2</sup>	

NB. A Cat5 cable has 4-pairs (8 cores)

For larger cable distances please contact manufacturer.

# bellissimo Digital Video Entry System

## Cable Distances – Version 1 Black and White Videophones

Video Controller to Black and White Videophone			
System	Distance	Cable	Comments
Single videophone per output	< 75m	1 x CAT5	
	< 300m	1 x CAT5 2 x 1mm <sup>2</sup>	
Single videophone + 3 extensions on each output, all cable powered	< 50m	1 x CAT5	Only Master videophone has 'Auto display'; Extensions are daisy-chained
	< 200m	1 x CAT5 2 x 1mm <sup>2</sup>	
Single videophone per output with separately powered extensions	< 75m	1 x CAT5	75m maximum to the cable powered videophone; daisy-chain up to 300m total
	< 300m	1 x CAT5 2 x 1mm <sup>2</sup>	
All videophones locally powered with a 340C power supply	< 300m	1 x CAT5	Locally powered videophones have 'Auto display'; extensions are daisy-chained
	<5m to 340C	2 x 1mm <sup>2</sup>	

# bellissimo Digital Video Entry System

## Installation & Commissioning

### Checklist

The following checklist is a summary of what is required. Refer to the relevant pages for further details.

- Review the section headed 'Safety Information' on page 38.
- Ensure that 'Design Considerations' on page 9 have been understood.
- Confirm that Cat5 cable has been specified.
- Install the system according to instructions in this section.
- Check/set the door controller settings.
- Check/set the video controller jumper and switch settings.
- Check/set each videophone dipswitch settings.

### Wiring

Refer to the diagrams from page 29 onwards as appropriate for the equipment you have.

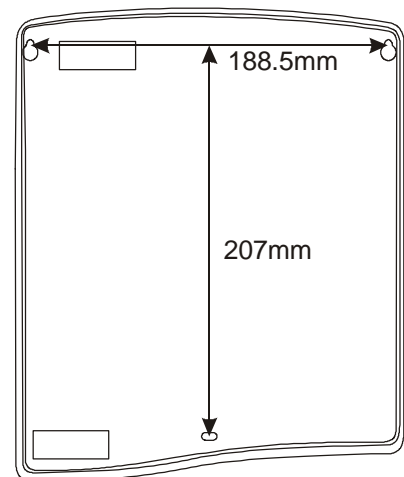
All wiring is carried out using a mixture of Cat5 for the signal wiring and 1mm<sup>2</sup> (or greater) cores for the power wiring; refer to Page 12 for further details. It is strongly recommended that a consistent colour code be used throughout such as that indicated on the connection diagram. Certain signals must be interconnected using a twisted pair from the Cat5 cable. These are clearly marked on the connection diagram and should be strictly observed.

### Entrance Panel

The panel should be mounted at an optimum height of 1.6 m, measured between the ground and the centre of the camera window. With flush mounting panels it is advisable to apply mastic to the top and side edges of the panel to prevent water ingress behind the panel, not the bottom edge. On construction sites the panel must be protected from corrosive substances such as 'brick acid'. The panel should be cleaned only with a damp cloth containing dilute detergent.

### Videophone

The videophone is designed to be wall mounted onto plasterboard or other masonry at an optimum height of 1.6m. It should be fixed with three No 8 screws (not supplied). Use the dimensions shown on the adjacent diagram. If the cable is to be feed from the wall cavity then make a hole for this at the same time. Fit the top two screws but do not fully tighten. Now remove the top cover of the videophone, which is secured by clips at both sides. If top or bottom cable entries are required, careful remove the appropriate cutout with side snips taking care not to damage any internal components. Hang the videophone on the two screws already fitted allowing the cable (if present) to feed through and the third screw to be inserted at the bottom. Tighten all three screws. Before replacing the Front Cover remove the protective film from the display lens and also check that the DipSwitch settings are correct or change as necessary (see Page 23).



# bellissimo Digital Video Entry System

## Audio Phones

The BSA audio phone can be used as a lower cost alternative to an extension videophone. It is styled like the *bellissimo* videophone. The phone is manufactured in white and grey high-impact ABS plastic that imparts high durability and compliments most wall furnishings. It incorporates both ***mute*** and ***lock*** illuminated buttons and it has an Electronic Ringing Tone with rotary preset volume.

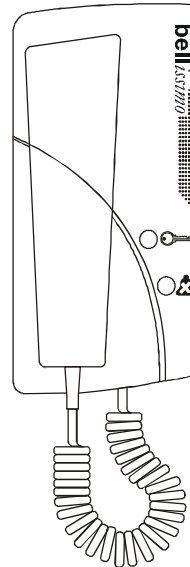
In some older systems the BS801 phone was used, it is identical in style to the popular model 801 phone but contains the necessary electronics for replacing a *bellissimo* videophone. The phone incorporates a 'lock release' push-button discreetly positioned on the base, and under the handset, to prevent inadvertent use.

Diagram 1:

BS801 Phone



BSA Phone



## Electric Door Release

Both fail-secure and fail-safe lock releases (including magnetic locks) use the same terminals. To set the lock type, refer to the 'Door Controller Settings'. When installing lock releases please allow a little movement on the door, as operation will be impaired if fitted too tight.

NB. Magnetic locks (maglocks) must be fitted with a suppressor at the lock terminals. Some manufacturers fit an acceptable internal suppressor.

## Fail Safe Exit Notes

Fail safe exits require an exit button and this should be normally open so that the controller can be used to give a timed exit. If the exit button has both normally open and normally closed contacts, then the normally closed contact can be wired in series with the release or maglock along with the break glass in case of equipment failure.

A not uncommon problem with maglocks, because they cannot be mechanically overridden, is being locked out of the building due to lost codes, fobs or equipment failure. So consider an alternate building entrance, or an externally accessible secure keyswitch, or a reliable method of disabling the system during overnight secure lockup.



# **bellissimo Digital Video Entry System**

## **Fail Secure Exit Notes**

Commonly fail secure exit doors incorporate a thumb-turn, door handle or mini push bar rather than use of an exit button. Fire officers usually require a minimum of door handle or push bar to open a door on a fire exit route – not a thumb-turn.

Most fail secure locks are not continuously rated and if an electrical hold open system is used for say busy times, then a continuously rated release must be used.

Powered bolt, shoot-bolt or other more secure door locking systems may require the use of separate power supplies or a suppressor to be fitted. Shoot-bolt systems for instance tend to require at least 1.5A peak current and this will require the use of an isolation relay and normally a separate power supply for the lock.

## **Exit Button Input**

The exit button is used to unlock the door for the preset lock operating time. The input is designed only for use with a normally open push button. 'Exit +' is the input and 'Exit -' is internally connected to 0V.

The 'Exit +' input can also be used for connection to other equipment to open the door as shown in Diagram H – *bellissimo* Combined System Connections.

## **Door Open Switch**

The door open switch is used to provide an indication at the phone that the door has been left open. This switch can have closed contacts when the door is closed or open contacts when the door is closed, the choice being made in Panel Programming. The default of 'contacts open when door closed' must be selected when this feature is not required.

## **Time Clock Sharing**

In a large system a single time clock can be shared between distributed equipment areas by borrowing one of the 'comm -' wires in the interconnecting Cat5 to use as the shared "Time clock common". See the detailed diagram on page 35.

## **Commissioning**

The major components of the **bellissimo** Digital system are fitted with high quality pluggable screw terminal blocks. This enables all the connections to the system to be fully completed, whilst easily isolating individual pieces of equipment during testing and commissioning.

When powering up for the first time, it is highly recommended that only the most basic system be connected. i.e. 1 BS videophone, 1 door controller and panel, and 1 video controller; the remaining equipment can be isolated by removing terminal blocks.

NB: Ensure the 1 door and video controller remain interconnected and that the 'end of line' controller is terminated temporarily using the jumpers (see page 22).

Proceed to test the system by calling the videophone from the door panel in the usual way. Any problems can be resolved by rechecking wiring and connections, assisted by the various suggestions and tests in the section "Troubleshooting". Once the basic system is fully functioning, continue to reconnect and test the remaining equipment item by item until completed.

# bellissimo Digital Video Entry System

## BSD-DIG Door Controller Settings

The BSD-DIG is programmed from the panel for all settings.

### Security





It is strongly recommended that the Panel Security Code (PSEC) be changed from its factory setting to prevent unauthorised access. Record the new number carefully as it cannot be easily changed if lost. It is also recommended that the Phone Programming Code (PPRG), and Coded Access Code (ACOD) are all changed from default even if not used.

To access panel programming without the code requires physical access to the controller PCB, borrow a jumper from say video gain (remember the setting) and place it on the 5 pin programming header between pins 1 & 2. Now pressing the test button will enter panel programming for 30S when the panel security code can be read or set. When the programming is finished replace the jumper back to its original location.

### Panel Programming

To use Panel Programming Mode: -

- firstly type the Panel Security Code (initially [3434]) followed by the **call** button.
- The display will show the first programmable parameter (MODE).
- Press the **door** button to alternate between the current value of the parameter and the name of the parameter.
- Press the **reception** button to step through the programmable parameters:
- To change a parameter simply type a new 4-digit value and then press **call**.
- To exit Panel Program Mode press **cancel**.
- If no button is pressed for 10S then programming mode will auto-cancel.

Code	Action	Default	Action	Description
←		⇒		
MODE		5000		Multi-Function (See Below)
CODE		1234		Access Code
PORT		9898		Reception/Porter's Phone Number
PSEC		3434		Panel Security Code
TTLK		0015		Talk Time / Phone active
TCLL		0015		Call Time / Ringing time

# bellissimo Digital Video Entry System

## MODE Parameter

Enter a 4-digit number ABCD, Where:

A is the Trade Mode 0-9

B is the lock type; 0= fail secure, 1=fail-safe

C is a combination of number of cameras and door switch polarity.

D is the lock duration 0-7 per Table

Default [5000]; Trade Mode 5, Fail-Secure Lock, One camera, Door switch open when door is closed, Lock Duration 3 seconds

### A Trade Mode:

'None' = No function; pressing the **door** button is ignored.

'Door' = Pressing the **door** button opens the door.

'Code' = Pressing the **door** button prompts for the [ACOD] access code to open the door.

Time Input	Trade Mode Setting									
	0	1	2	3	4	5	6	7	8	9
Open	None	Door	Code	None	Door	Code	None	Door	Code	None
Closed	None	None	None	Door	Door	Door	Code	Code	Code	None

### B Lock Type

Fail secure lock: - Requires alternate mechanical means, key or thumb-turn to open on power failure

Fail safe lock: - Lock opens on power failure

### C Camera and Door Status Switch

Setting	Door Status	Cameras
0	Contact open when door is closed*	1*
1	Contact open when door is closed*	2
2	Contact closed when door is closed	1
3	Contact closed when door is closed	2

The default allows for no switch fitted.

### D Lock Duration

Value	Lock Time
0	3s*
1	4s
2	5s
3	6s
4	8s
5	10s
6	15s
7	20s

\* Default setting

# bellissimo Digital Video Entry System

## CODE Access Codes

Code to open the door. Valid whenever the display indicates [Code]. The Trades mode needs to be set to 'Code' as per the table above. The default is [1234] and it is recommended that this is changed for security.

The code must be 4 digits and no letters, leading 0 is OK (e.g. [0246]).

## PORT Reception Address

The **reception** button is used to call a reception desk or similar. The number is that of the called phone. The default is [9898] which is unlikely to be used by a flat.

## PSEC Security Key

The security key is required to gain access to panel programming.

The code is entered then pressing the **call** button, the default is [3434] and it is recommended that this be changed for security.

This code can contain letters and numbers for added security.

## TTLK Talking Time/Videophone Active

Enter from 0 to 15 as per the table

Setting	Call Time	Setting	Call Time	Setting	Call Time	Setting	Call Time
0	15s	4	60s	8	150s	12	60s
1	20s	5	75s	9	180s	13	60s
2	30s	6	90s	10	60s	14	60s
3	45s	7	120s	11	60s	<b>15</b>	<b>60s*</b>

## TCLL Ringing Time/Call Time and Ring Effect

Enter from 0 to 15 as per the table

Setting	Call Time	Ring Cadence or Sound Effect
0	5s	1 in 3 – 1 ring every 3 seconds
1	8s	1 in 3 – 1 ring every 3 seconds
2	10s	1 in 3 – 1 ring every 3 seconds
3	15s	1 in 3 – 1 ring every 3 seconds
4	20s	1 in 3 – 1 ring every 3 seconds
5	30s	1 in 3 – 1 ring every 3 seconds
6	40s	1 in 3 – 1 ring every 3 seconds
7	45s	1 in 3 – 1 ring every 3 seconds
8	50s	1 in 3 – 1 ring every 3 seconds
9	60s	1 in 3 – 1 ring every 3 seconds
10	30s	1 in 3 (Reserved For future use)
11	30s	1 in 3 (Reserved For future use)
12	30s	2 in 15 – 2 rings, 15S silence, repeat
13	30s	1 in 15 – 1 ring, 15S silence, repeat
14	30s	1 in 5 – 1 ring every 5 seconds
<b>15</b>	<b>30s*</b>	<b>1 in 3* – 1 ring every 3 seconds</b>

\* Default setting

# **bellissimo Digital Video Entry System**

## **BSD-DIG Door Controller Jumper Settings**

### **Camera Terminator**

There is a separate jumper for both video Camera inputs. This has three settings, 75R for terminating coaxial cable, 100R for terminating twisted pair Cat5 cable and None for use when passing the cable on to another device or controller.

### **Video Gain Control**

The 'Video Gain' jumper on door controllers should always be set to '0' unless directed by 'Bell System Technical Support'. This jumper is only required on some systems with very long camera to videophone cable runs well in excess of 150m. Use of this jumper with short runs will cause picture problems.

# bellissimo Digital Video Entry System

## BSC4 Video Controller Settings

### Jumper settings

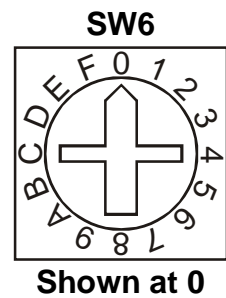
The "Video Gain" jumper on video controllers should always be set to "0" unless directed by Bell System Technical. This jumper is only required on some systems with very long camera to videophone cable runs well in excess of 150m. Use of this jumper with short runs will cause picture problems.

The "Video Terminator" jumper must be set to OFF on all but the furthest Video Controller from the Door Controller(s), this one must be set to ON.

### Switch settings

SW6 is a rotary 16 position switch which sets the videophone addresses as per the following table.

SW6 Setting				
Pos	Phone 1	Phone 2	Phone 3	Phone 4
0	None	None	None	None
1	1	2	3	4
2	5	6	7	8
3	9	10	11	12
4	13	14	15	16
5	17	18	19	20
6	21	22	23	24
7	25	26	27	28
8	29	30	31	32
9	33	34	35	36
A	37	38	39	40
B	41	42	43	44
C	45	46	47	48
D	49	50	51	52
E	53	54	55	56
F	57	58	59	60



#### ATTENTION

Each SW6 on all BSC4's MUST be set correctly for the phones to ring.

This switch is shipped set to 0 to prevent multiple phones ringing on initial installation.

### Major Address Offset DIP SW7(1-2) – Functionality from Build 3

2	1	Offset
Off	Off	+0*
Off	On	+60
On	Off	+120
On	On	+180

The number in this table is added to the numbers in the table above to set the phone addresses.

#### SW7



OFF ↔ ON

### Minor Address Offset DIP SW7(3-4) – Functionality from Build 3

4	3	Offset
Off	Off	+0*
Off	On	+1
On	Off	+2
On	On	+3

The number in this table is added to the numbers in both tables above to set the phone addresses.

#### SW7



OFF ↔ ON

# bellissimo Digital Video Entry System

## BS Videophone Switch Settings

### Mute Time Setting SW2 (1-4)

4	3	2	1	Mute Time
On	On	On	On	Disabled <sup>1</sup>
On	On	On	Off	2 minutes
On	On	Off	On	5 minutes
On	On	Off	Off	10 minutes
On	Off	On	On	15 minutes
On	Off	On	Off	20 minutes
On	Off	Off	On	30 minutes
On	Off	Off	Off	45 minutes
Off	On	On	On	1 hour
Off	On	On	Off	2 hours
Off	On	Off	On	4 hours
Off	On	Off	Off	5 hours
Off	Off	On	On	6 hours
Off	Off	On	Off	8 hours
Off	Off	Off	On	10 hours
<b>Off</b>	<b>Off</b>	<b>Off</b>	<b>Off</b>	<b>*Indefinite<sup>2</sup></b>

\*Default setting

<sup>1</sup>Disabled means pressing the **mute** button has no effect.

<sup>2</sup>Indefinite; the **mute** is cancelled by pressing the button again.

SW2



OFF ↔ ON

SW2



OFF ↔ ON

### Individual Functions DIP SW2 (5-8)

SW2-5	Master / Slave	Which videophone to set
*Off	Master	Only or first videophone per BSC4 output.
On	Slave / extension	Second and subsequent videophones per BSC4 output.
SW2-6	Auto Display on Ring	Videophone display behaviour
*Off	Display during ring	Picture is on while ringing, stays on when answered.
On	No display during ring	Picture is off while ringing, comes on when answered.
SW2-7	Mute Function	Action of muted videophone
*Off	Ringer mute only	Videophone indicates ring by flashing the <b>view</b> button, picture comes on if SW2-6 is off, no sound.
On	Disable videophone	Videophone does not respond to a call.
SW2-8	Video Terminator	Which videophone has the setting
Off	No termination	Any videophone not at the end of the cable.
*On	Terminated	The videophone at the end of the cable.

\*Default setting

# bellissimo Digital Video Entry System

## Troubleshooting

### Common Faults

A very high percentage of calls to our technical support number, regarding new installations, are resolved to faulty wiring. The reasons for these are various: -

Broken cores, especially short links, sometimes broken inside the insulation!

Connectors clamped onto insulation instead of copper.

Wire in the wrong side of a rising clamp connection, the clamps need to be unscrewed far enough to stop the wire going “underneath”.

Shorts or opens due to cables having been stapled or nailed through.

A common fault even we make is wiring a connector left to right instead of right to left, or one or more twisted pairs the wrong way round.

**Tip.** The heads of screws on connectors are not a reliable means of making a connection, try pushing the probe into the wire entry point.

### Quick Fault Reference

These tables provide a quick indication of the possible fault.

Panel Display Problems	
No display	<ul style="list-style-type: none"><li>• No power at display, check for a minimum of 10V.</li><li>• To test display, cycle the power on BSD-DIG and check that the display version number is displayed. “V1.0”</li></ul>
Display indicates “F 1 – –”	<ul style="list-style-type: none"><li>• “D” connection open circuit.</li></ul>
Display indicates “F 2 – –”	<ul style="list-style-type: none"><li>• “D” connection no data reception.</li><li>• “D” connection shorted to 0V</li><li>• This fault only on later BVD1 displays not compatible with BSD-DIG Version 1</li></ul>

Power Problems	
Videophone resetting (The three indicators lights show the power on sequence).	<ul style="list-style-type: none"><li>• Power supply intermittent short or overload.</li><li>• More than 1 extension enabled for auto display.</li><li>• Lock output short-circuit; see ‘Lock Problems’</li></ul>
28V LED does not light on controller.	<ul style="list-style-type: none"><li>• Temporarily remove connection to 28V+ output. If it now comes on there is a short on the phone cabling.</li><li>• 12V input connections are reversed.</li></ul>
PS4 output voltage fluctuating, meter reading unstable.	<ul style="list-style-type: none"><li>• Output overload is causing current limit to operate, check grouping of controllers to power supplies, see page 10 for details</li><li>• See Lock Problems below</li></ul>



# bellissimo Digital Video Entry System

Call Problems	
Videophone does not ring or flash when called	<ul style="list-style-type: none"> <li>• Videophone off hook or muted on full mute.</li> <li>• No power to videophone; check that the red mute lamp flashes when the handset is picked up.</li> <li>• Data wiring has a fault, Data A or B broken.</li> <li>• 0V to controller missing on separately powered videophone.</li> </ul>
No extension videophone rings or flashes when called.	<ul style="list-style-type: none"> <li>• Master videophone off hook or muted on full mute.</li> </ul>
Green Lock light on videophone flashes once when called.	<ul style="list-style-type: none"> <li>• Videophone set to slave with no master present or responding.</li> </ul>

Lock Release Problems	
Lock release does not operate or clicks but does not open.	<ul style="list-style-type: none"> <li>• Connections to Lock Release are open or shorted.</li> <li>• Voltage drop due to cable too thin.</li> <li>• Lock current is too high; Power supply is resetting.</li> <li>• Lock release jammed due to over tight fitting.</li> </ul>
Maglock does not hold strongly.	<ul style="list-style-type: none"> <li>• Voltage drop due to cable too thin.</li> </ul>
<b>TEST:</b> Press 'Test' Button on Door Controller (when system idle):	<ul style="list-style-type: none"> <li>• Confirm 'LOCK' LED illuminates for 3 seconds.</li> <li>• Check Output Voltage at LOCK terminals.</li> </ul>
Lock release operates all the time or in reverse	<ul style="list-style-type: none"> <li>• Check MODE variable is set for the correct lock type.</li> <li>• Normally closed switch has been used for exit button.</li> </ul>
Lock operates from the exit button but not the test button or phone.	<ul style="list-style-type: none"> <li>• Normally closed switch has been used for exit button.</li> </ul>

Video Problems	
Blank picture when: - Calling videophone/ Pressing <b>view</b>	<ul style="list-style-type: none"> <li>• Broken or missing Video + or Video – wire.</li> <li>• Cameras incorrectly configured refer to <b>MODE</b> setting on page 19</li> <li>• Call is from an audio only panel.</li> </ul>
No picture when calling videophone	<ul style="list-style-type: none"> <li>• Check auto display switch is on. See page 23</li> </ul>
No picture when pressing <b>view</b>	<ul style="list-style-type: none"> <li>• CCTV is not enabled on digital controllers</li> </ul>
Repeated pressing of <b>view</b> does not select cameras as expected.	<ul style="list-style-type: none"> <li>• Check SW2-6 at all entrances is set for correct number of cameras at that entrance</li> </ul>
Unstable picture	<ul style="list-style-type: none"> <li>• Power supply voltage low.</li> <li>• Terminator switch not set on last videophone.</li> <li>• Too many terminator switches set on.</li> <li>• Video gain jumper set to high on a short run.</li> <li>• Very bright area in background upsetting camera.</li> </ul>
Unstable picture possibly with areas looking like a photographic negative.	<ul style="list-style-type: none"> <li>• Video + and – reversed, or M and S reversed.</li> </ul>
Entrance cannot be seen at night	<ul style="list-style-type: none"> <li>• Power not connected to camera IR night illumination. Connect 1 to + on camera.</li> </ul>

# bellissimo Digital Video Entry System

<b>Speech Problems</b>	
Loud tone at the entrance speaker. (Acoustic feedback)	<ul style="list-style-type: none"> <li>• Volume controls set too high</li> <li>• Broken Audio 1 or 2 wire in the cabling.</li> <li>• Intermittent or broken wire in Data A or B.</li> <li>• Videophone has reset; see power faults. Check model 61 is hard against the panel with no gaps.</li> <li>• Check model 61 speech unit is the right way round and that the microphone hole in the speech unit lines up with the hole in the panel.</li> <li>• More than one entrance has SW2-8 set to 'Enable' causing 2 entrances to become active on CCTV request.</li> </ul>
Low volume speech in one or both directions	<ul style="list-style-type: none"> <li>• Adjust pot on 61 speech unit marked A and with a speaker symbol for volume at the panel.</li> <li>• Adjust pot on 61 speech unit marked B and with a microphone symbol for volume at the phone.</li> <li>• If volume cannot be increased in one direction without feedback, the volume in the other direction may have to be reduced as a compromise.</li> <li>• Check model 61 is hard against the panel with no gaps.</li> <li>• Check model 61 speech unit is the right way round and that the microphone hole in the speech unit lines up with the hole in the panel.</li> </ul>
No speech from videophone to entrance	<ul style="list-style-type: none"> <li>• Missing R core to door controller</li> <li>• Broken Audio 1 or 2 connections.</li> </ul>
No speech from entrance to videophone	<ul style="list-style-type: none"> <li>• Missing T core to door controller</li> <li>• Broken Audio 1 or 2 connections.</li> </ul>

# bellissimo Digital Video Entry System

## Specifications

<b>BSD-DIG Door Controller</b>	
Size	185mm x 230mm x 42mm
Supply Voltage	10.8V min, 13.8V typical, 15V max
Current Consumption	80mA idle @13.8V, 500mA active Includes display, speech not cameras.

<b>Model C-CAMBS Colour Camera</b>	
Size	60mm x 57mm x 31mm
Supply Voltage	10V d.c. minimum, 15V d.c. maximum
Current consumption	175mA maximum without IR 215mA maximum with IR (Link 1 to +)
Image Device	1/3" CCD
Sensitivity	0.01 lux, auto switching to B/W in low light levels
Minimum Focus	100mm
Viewing Angle	92° (typical)
Video Output	PAL composite video 1Vpk-pk (75 Ohm)
Resolution	More than 330 lines
Back light compensation	Yes

<b>BSC4 Video Controller</b>	
Size	185mm x 230mm x 42mm
Supply Voltage	10.8V min, 13.8V typical, 15V max
Current Consumption	350mA idle, 3A max @13.8V

<b>BS Colour Videophone</b>	
Size	210mm x 260mm x 60mm
Fixing	Wall Mounted
Supply Voltage	11V minimum – local power supply only. 20V to 28V typical
Current Consumption	25mA @28V idle, 375mA @ 11V active
Buzzer Mute Time	Disabled, 1minute through 10 hours, indefinite

<b>Model BS801 Phone</b>	
Size	212mm x 85mm x 55mm
Supply Voltage	20V d.c. minimum, 30V d.c. maximum
Current consumption	10mA idle, 120mA ringing @28V

<b>Model BSA Phone</b>	
Size	235mm x 105mm x 25mm
Supply Voltage	10V d.c. minimum, 30V d.c. maximum
Current consumption	20mA idle, 67mA ringing @13.8V

# bellissimo Digital Video Entry System

<b>BSSW Gate Switcher / Block Isolator</b>	
Size	185mm x 230mm x 42mm
Supply Voltage	10.8V min, 13.8V typical, 15V max
Current Consumption	80mA idle, 210mA max @13.8V

<b>Model 61 Speech Unit</b>	
Size	98mm x 60mm x 24mm
Supply Voltage	10V d.c. minimum, 15V d.c. maximum
Current consumption	100mA d.c. maximum

<b>PS4 Power Supply</b>	
Size	236mm x 105mm x 81mm
Output Voltage (regulated)	13.5V d.c. min, 13.8V d.c. nom, 14.1V d.c. max
Output Current	3A continuous, 4A peak (5 minutes max)
Mains Supply Internal Fuse	Not user replaceable
Supply Voltage	230V 50Hz nominal
Temperature Range	0 °C to 50 °C

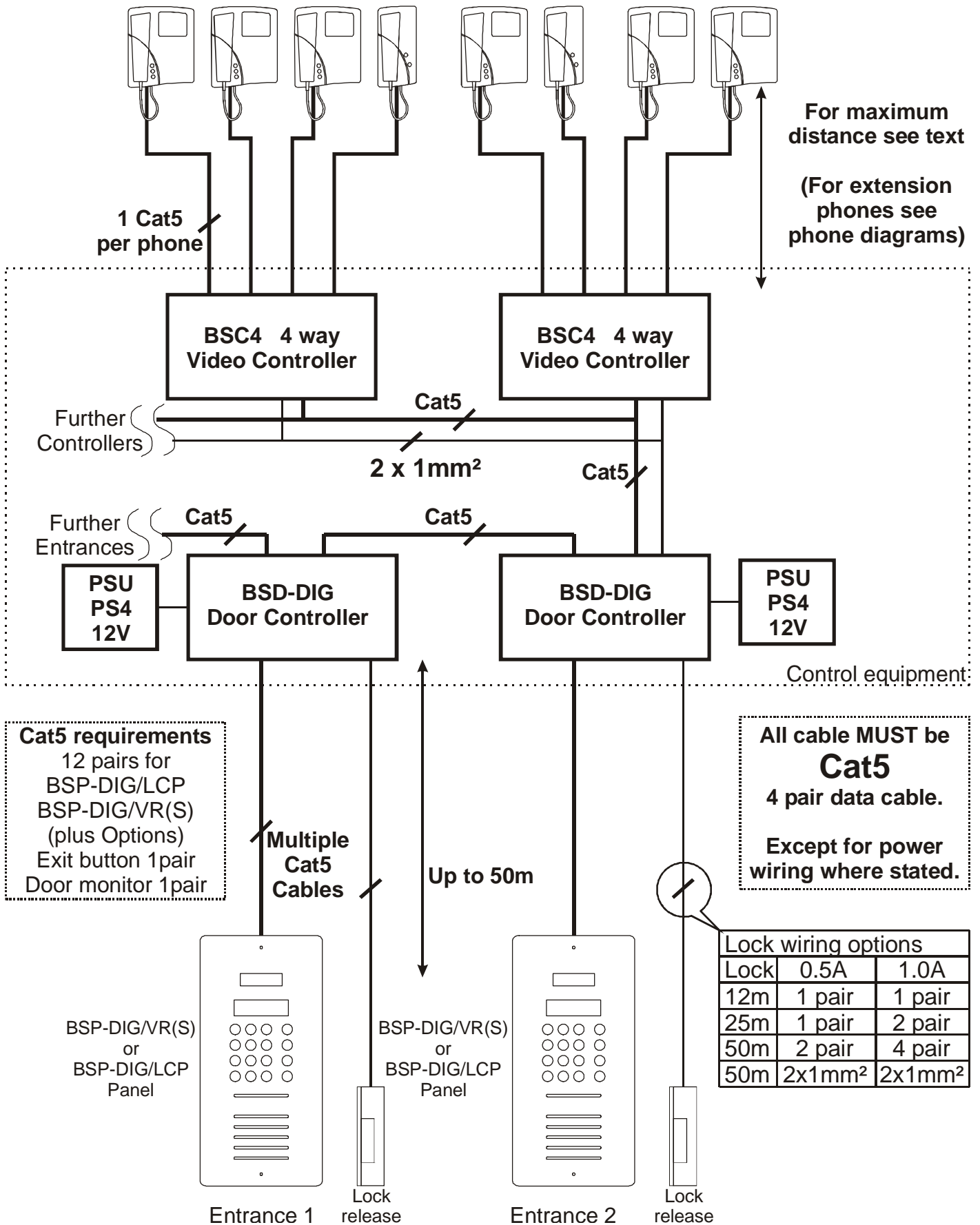
<b>340C Power Supply</b>	
Size	140mm x 60mm x 53mm
Output Voltage (regulated)	13.5V Min, 13.8V Nom, 14.1V Max
Output Current	1A continuous, 1.5A peak (5 minutes max)
Mains Supply Internal Fuse	Not user replaceable
Supply Voltage	230V 50Hz nominal
Temperature Range	0 °C to 50 °C

<b>840 Power Supply – Battery Backed</b>	
Size	350mm x 330mm x 80mm
Output Voltage (regulated)	13.5V Min, 13.8V Nom, 14.1V Max
Output Current	3A continuous, 4A peak (5 minutes max)
Mains Supply Internal Fuse	T2A 20mm HBC (HRC) Ceramic
Battery Fuse	F4A 20mm Glass
Supply Voltage	230V 50Hz nominal
Temperature Range	0 °C to 50 °C

<b>Model CAMBS Mono Camera</b>	
Size	60mm x 57mm x 31mm
Supply Voltage	10V d.c. minimum, 15V d.c. maximum
Current consumption	175mA maximum without IR 215mA maximum with IR (Link 1 to +)
Image Device	1/3" CCD
Sensitivity	0.1 lux
Minimum Focus	100mm
Viewing Angle	92° (typical)

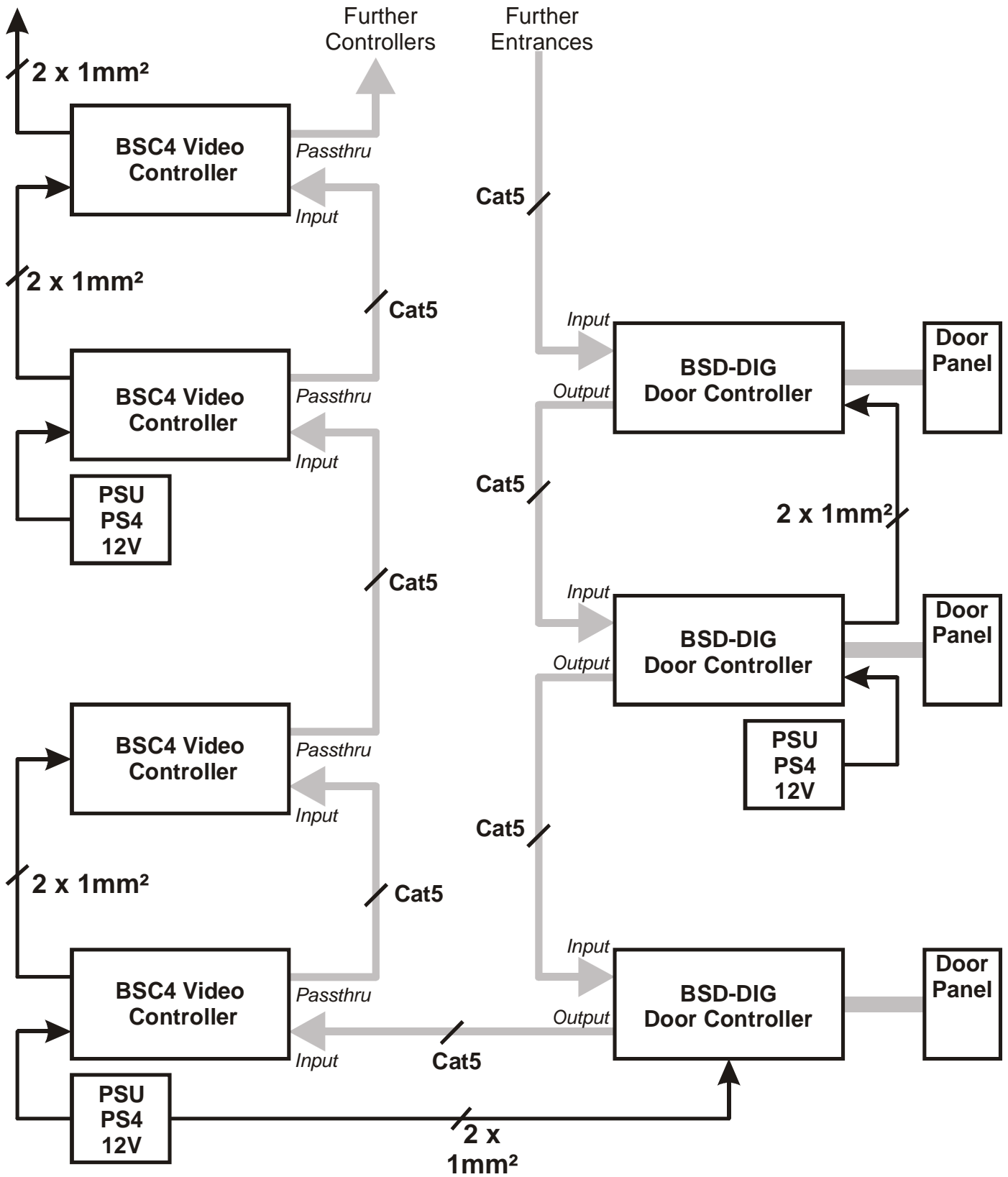
# bellissimo Digital Video Entry System

## Diagram A – Basic System Overview Cabling



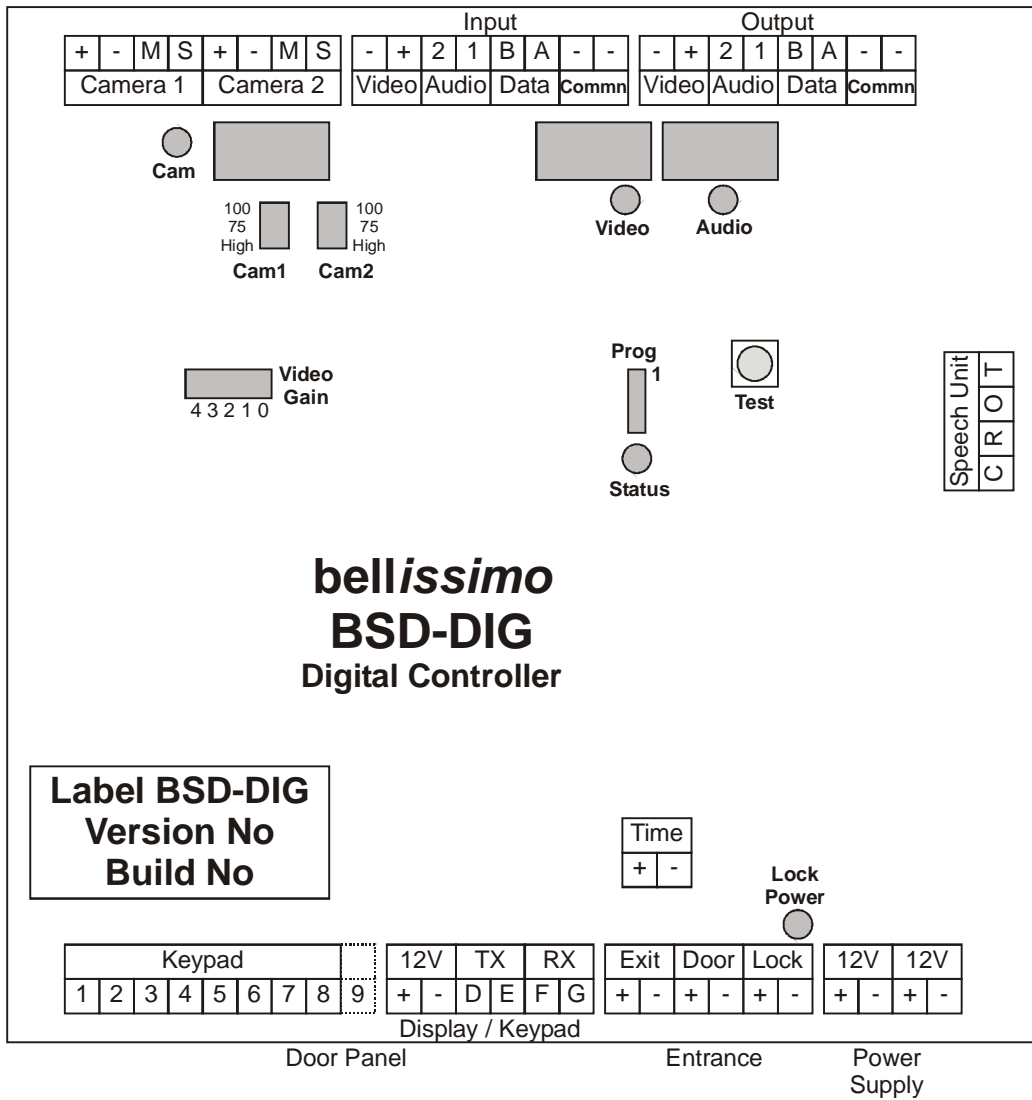
# bellissimo Digital Video Entry System

## Diagram B – Large system Overview Illustration of Power Supply Distribution

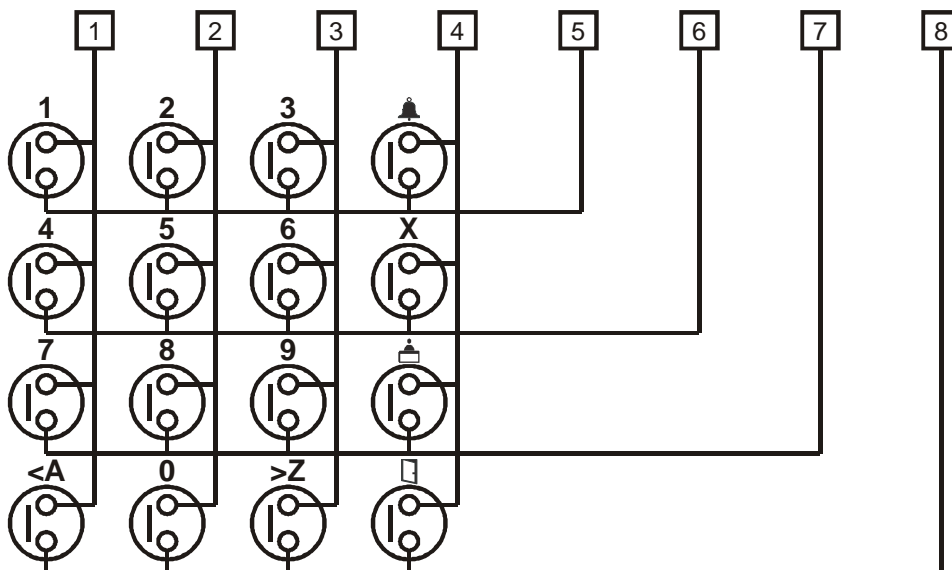


# bellissimo Digital Video Entry System

## Diagram C – BSD\_DIG PCB Detail

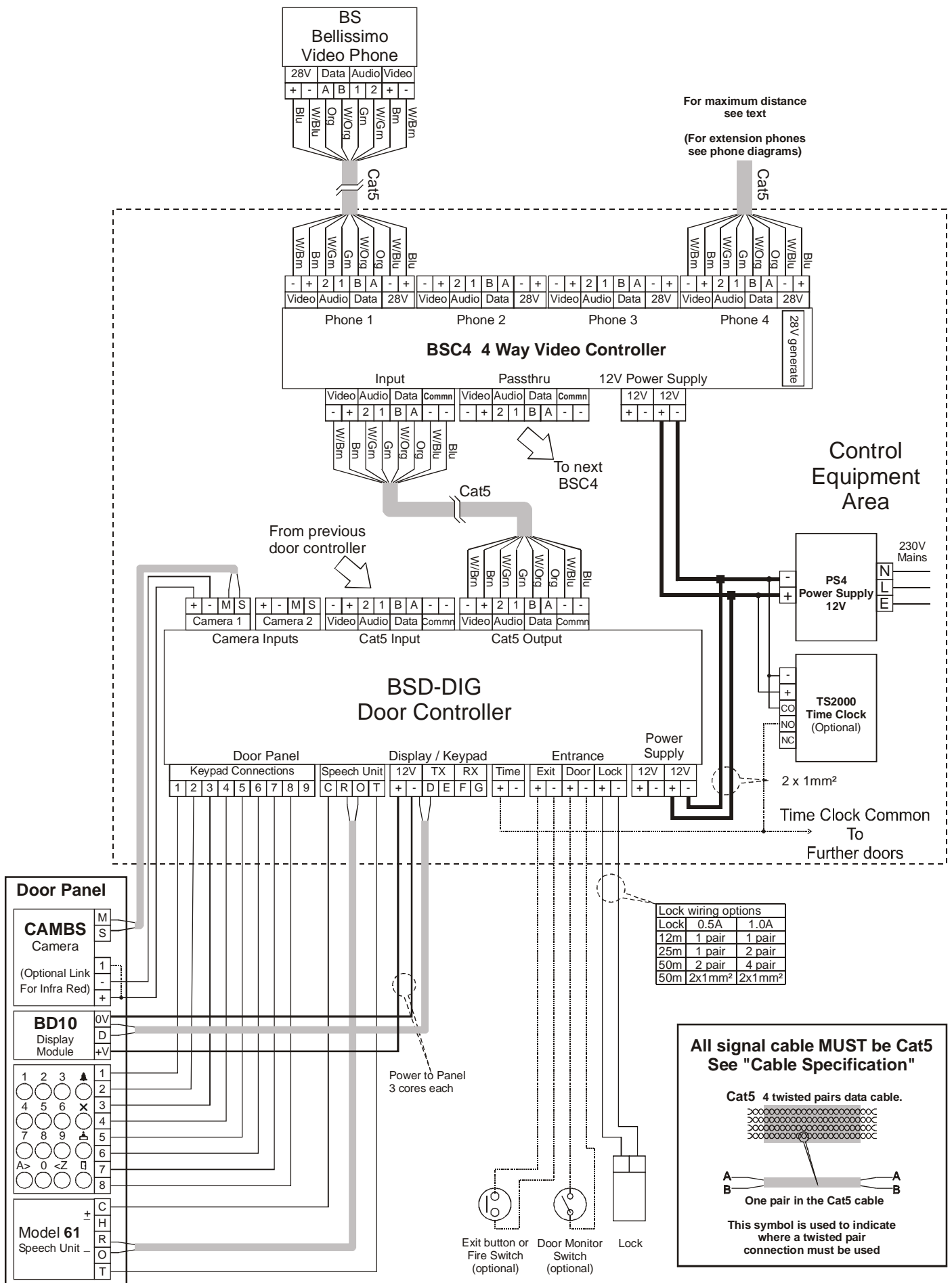


### BSD-DIG Keypad Matrix



# bellissimo Digital Video Entry System

## Diagram D – Basic System Wiring Detail – VR or LCP

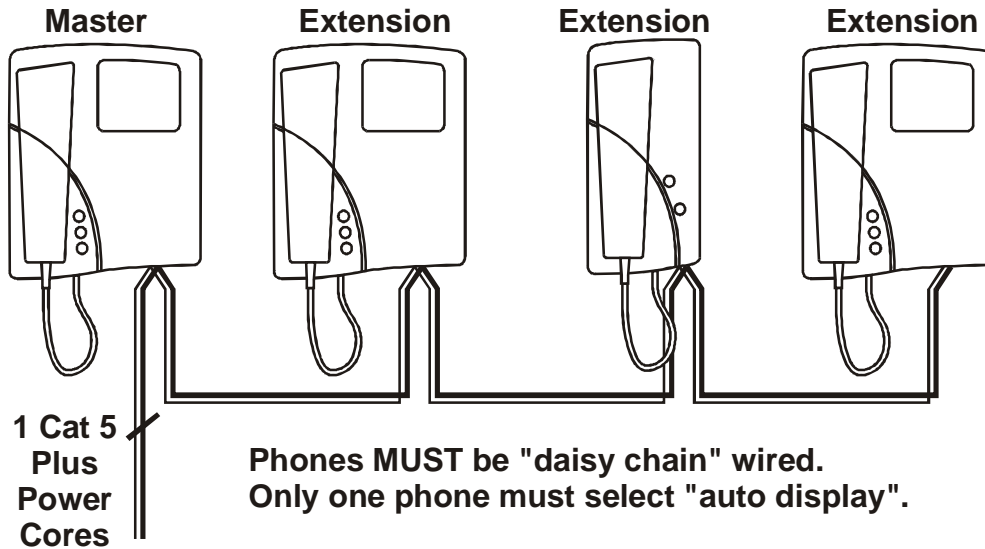




# bellissimo Digital Video Entry System

## Diagram E – Videophone and Extension Wiring

See tables in text for maximum cable runs and cable cross sections.  
Additional power cores can be used for longer runs.

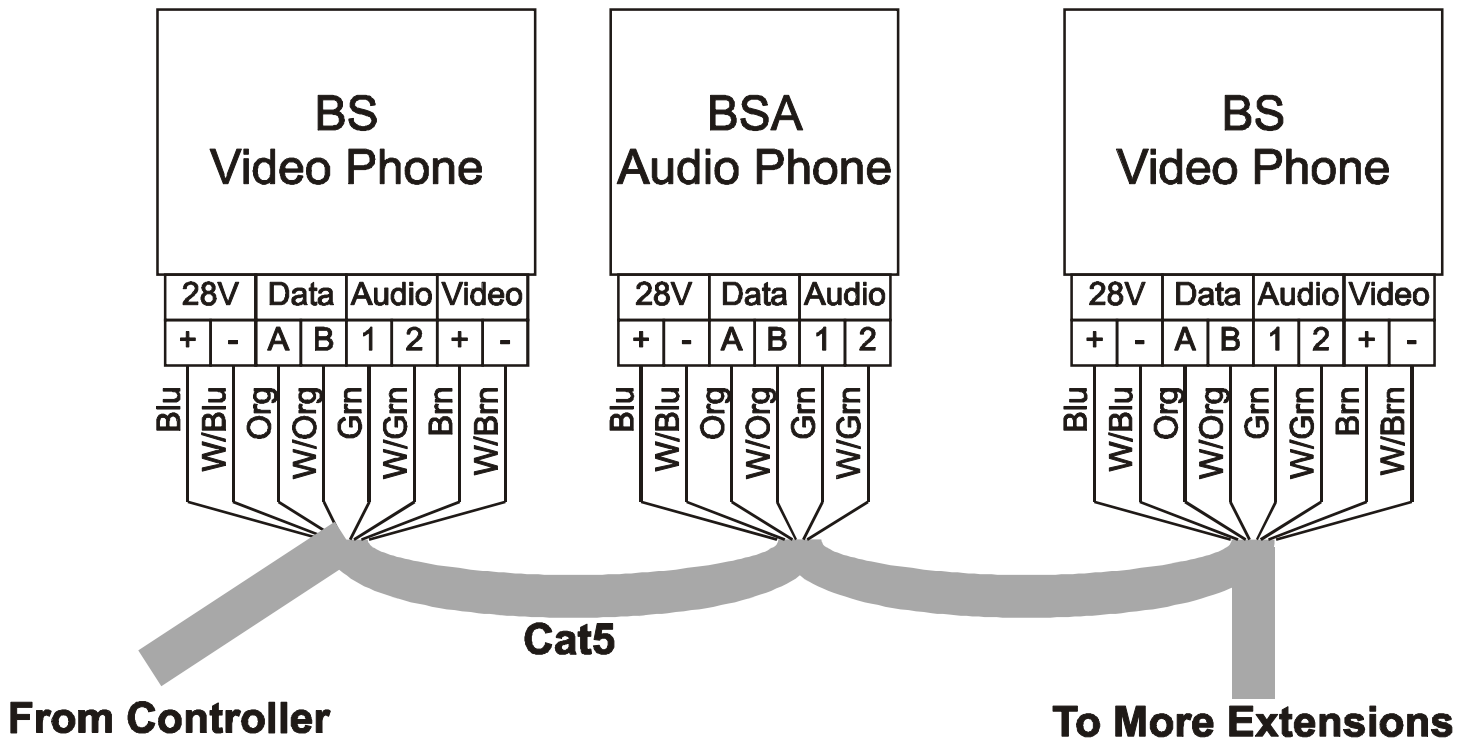


### Warnings for each flat run :-

Only one phone must be Master (Recommend first phone)

Auto display on one phone only (For auto display on multiple phones see next Diagram)

Last (or only) Phone on cable requires Dip-switch 8 ON all other Phones Dip-switch 8 OFF

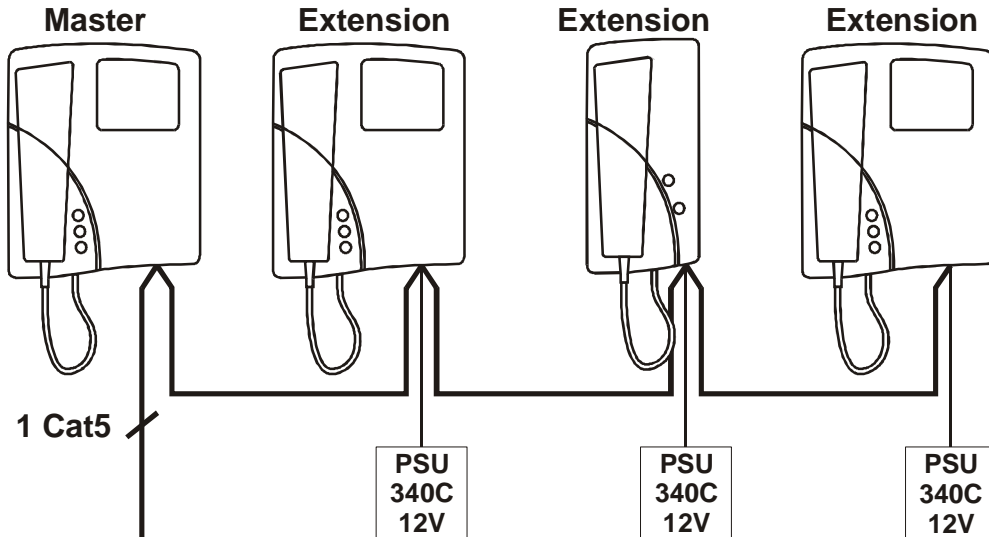


When additional power cores are required  
replace Blu and W/Blu with the thicker wires

# bellissimo Digital Video Entry System

## Diagram F – Videophone Local Power Wiring

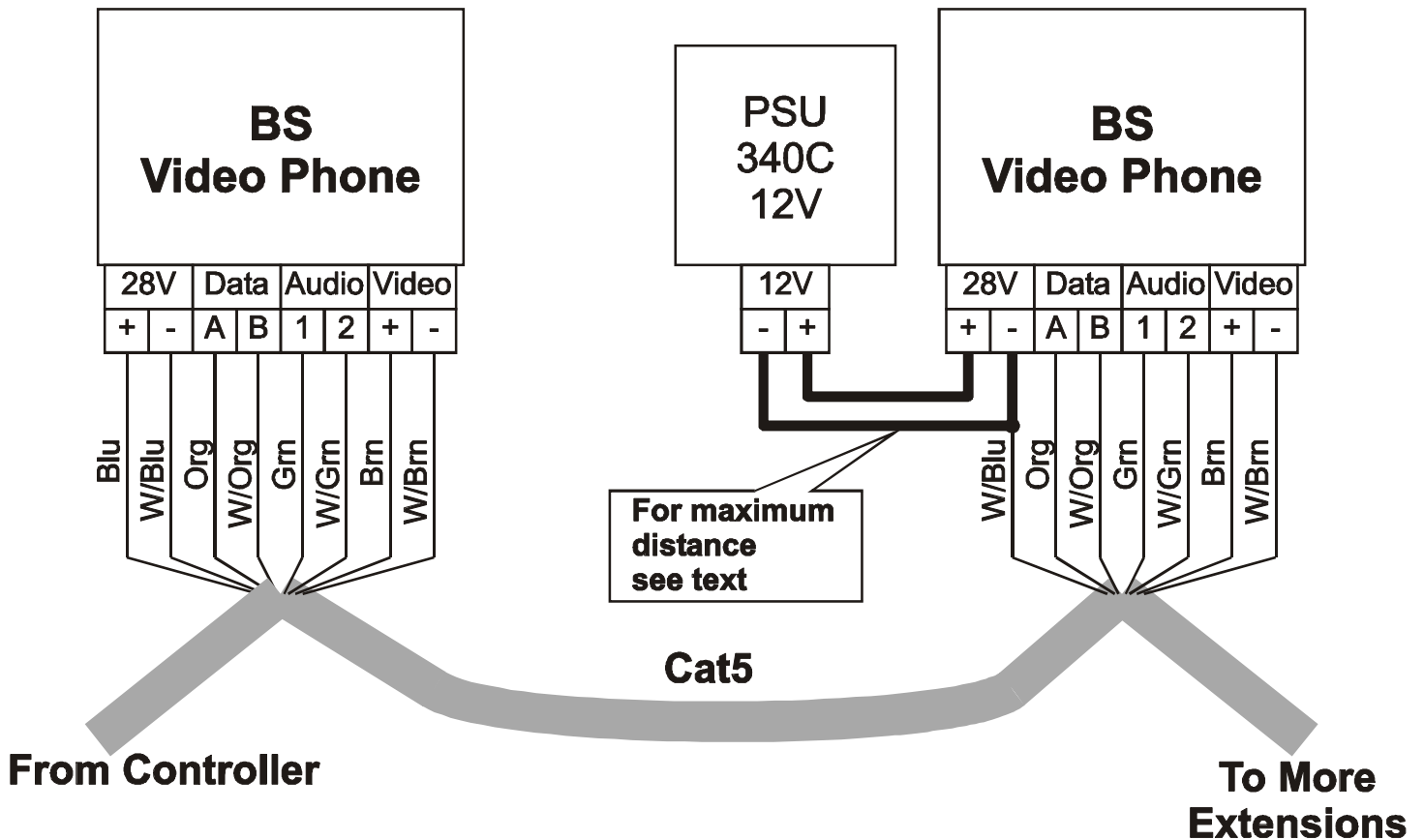
Where more than one extension phone is required to provide "auto display" then additional power supplies will be required



**IMPORTANT:**

The 28V - connection must be made between all phones and the controller.

The 28V + connection is only connected to the local power supply.

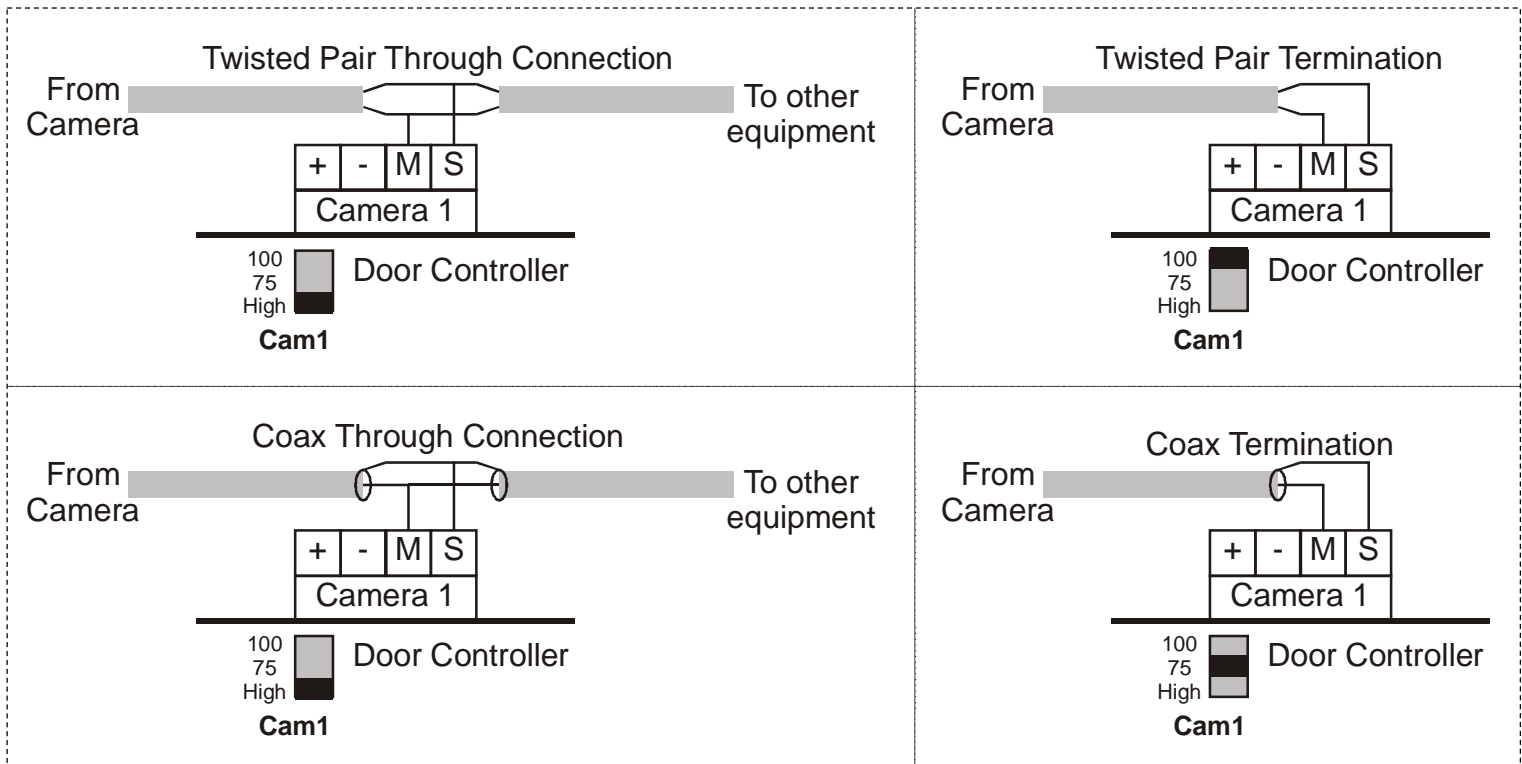


# bellissimo Digital Video Entry System

## Diagram G – Option Details

### Camera Termination Options

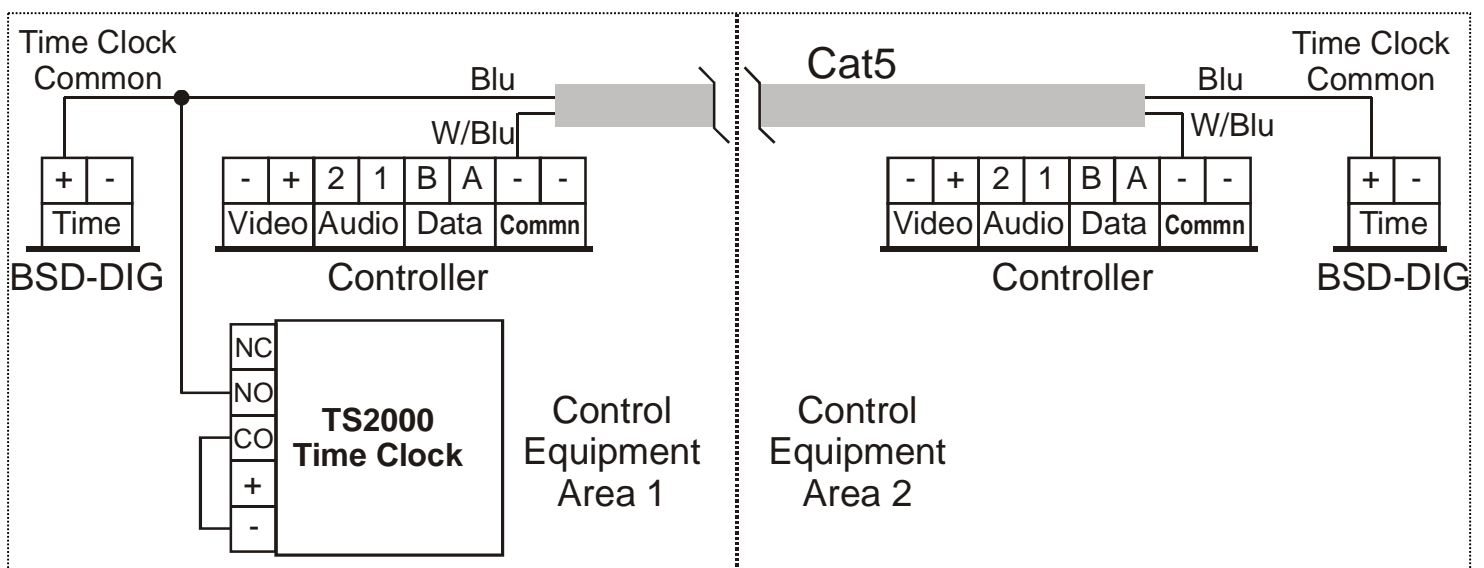
Cameras may be wired in either twisted pair or coax and shared with other equipment.



### Time Clock Sharing

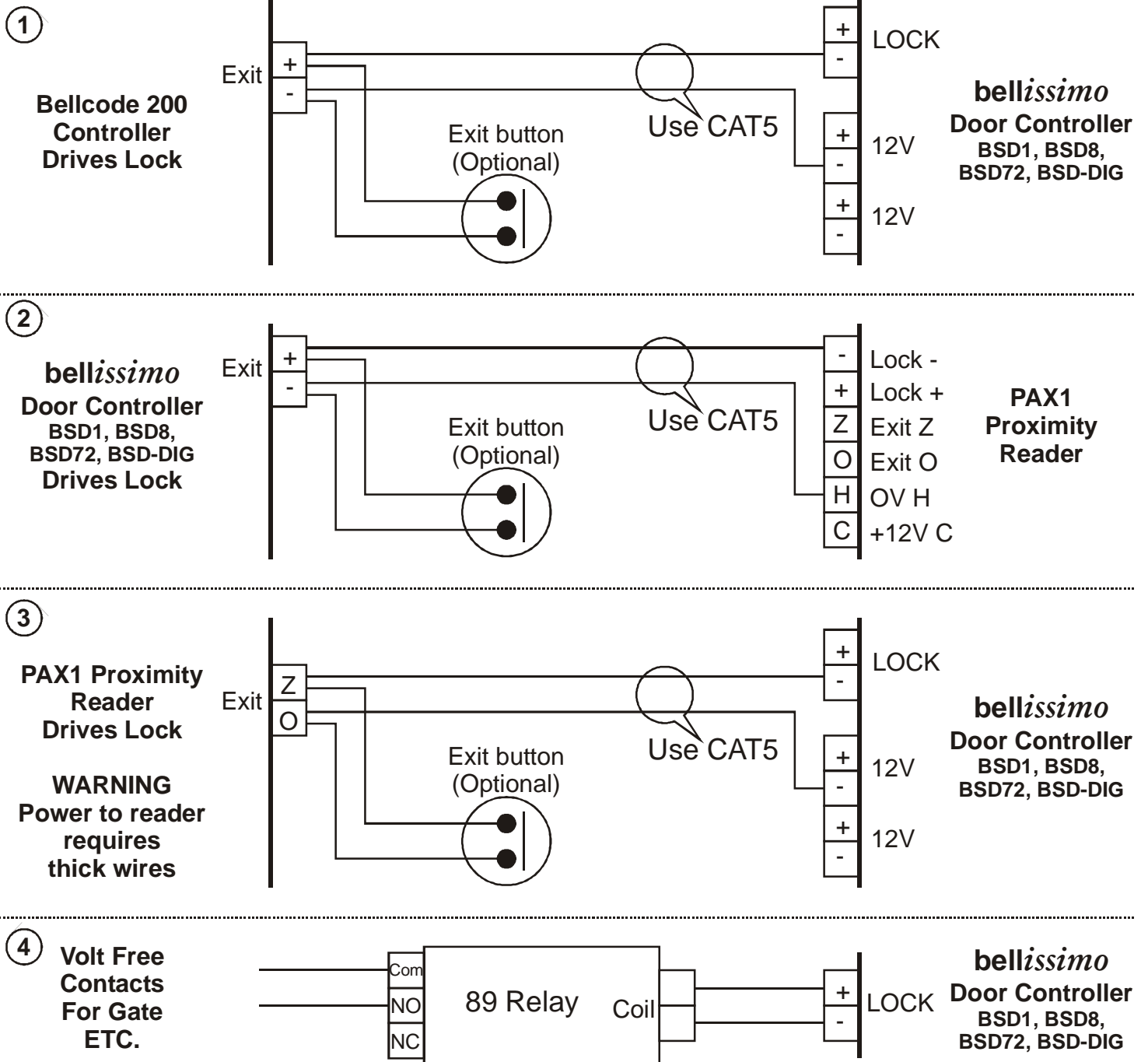
A time clock can be shared between distributed equipment areas by borrowing one of the 'comm -' wires in the interconnecting Cat5 to use as the shared "Time clock common".

The "Time clock common" signal is sharable across all Bell controller types.



# bellissimo Digital Video Entry System

## Diagram H – bellissimo Combined System Connections



### Notes

Circuit 1. Connect the lock release or Maglock using the instructions in "Bellcode Manual inc CK200 CS109 (PD-078)".

Circuit 2. Leave the Proximity Reader set to Fail secure.

Circuit 3. Connect the lock release using the "PAX1 Operating Instructions (PD-093)".

Circuits 1,3,4. Leave the BSD controller set to Fail secure.

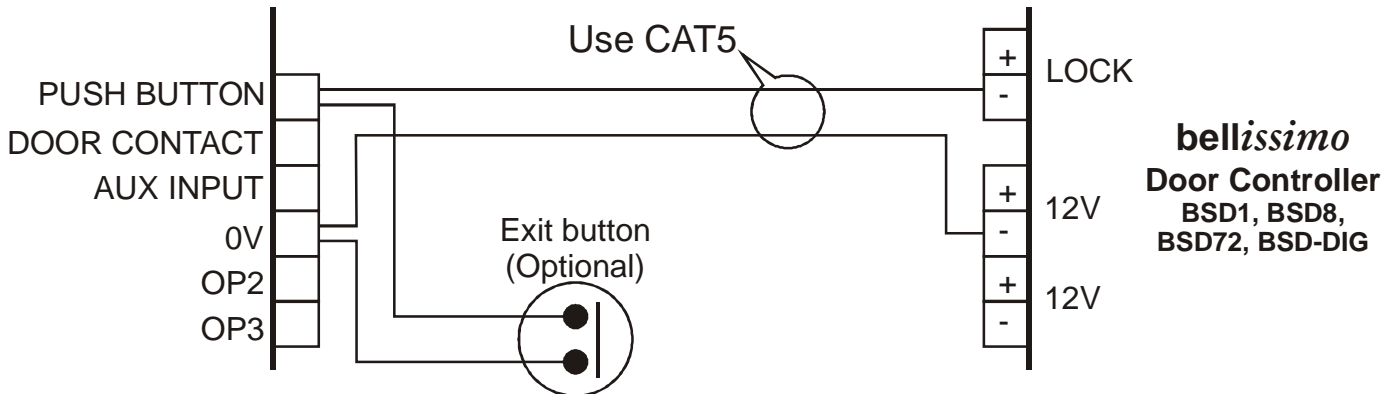
Note 1. A normally open exit button can still be fitted in addition to the bellissimo wiring.

Note 2. The 12V - connection can be omitted if the 2 units are sharing a power supply.

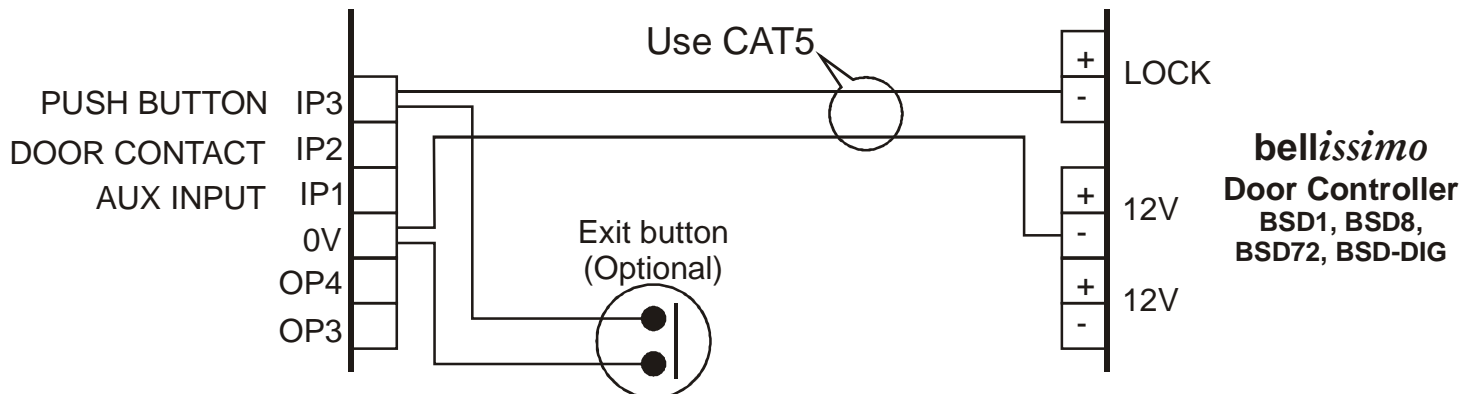
# bellissimo Digital Video Entry System

## Diagram I – ACT Proximity to bellissimo Connections

### ACT 1000/2000/3000 Proximity Controller



### ACT 100e Proximity Extender



### Notes

1. Connect the lock release or Maglock using the ACT Manuals.
2. Leave the BSD\* controller set to Fail Secure regardless of the type of release used.
3. A normally open exit button can still be fitted to the ACT controller in addition to the bellissimo wiring.
4. The BSD\* controller 12V - to ACT 0V connection can be omitted if the 2 units are sharing a power supply.
5. Look for the notes on the ACT installation diagram concerning the use of links when the door contact is not used and when a power supply without power fail is not used.

# bellissimo Digital Video Entry System

## Safety Information and Declarations

Connections to the 240VAC mains supply must be carried out by a qualified electrician or similar competent person, and made in accordance with current legislative requirements. A two-pole switch (as provided by a Consumer Unit or Switch-Fuse) must be included to isolate both Live and Neutral during Installation or Maintenance. The circuit must be protected by a fuse or other current-limiting device, rated according to the capacity of the cable used, up to a maximum of 10A. Use only mains cable to BS6004 or equivalent, within the following specified limits:

	Min	Max
Conductor Diameter	1.0mm (0.8mm <sup>2</sup> )	2.25mm (4mm <sup>2</sup> )
Cable Diameter	4.0mm	8.0mm

### Model 840 Power Supply (with battery standby)

The Model 840 power supply must be placed in a protected indoor environment such as an electrical cupboard. It must be secured to the wall with adequate fixings so that there is no possibility of it falling. The lead-acid battery for the standby power supply is shipped in separate packaging. It should only be connected once the system has been fully tested. Connection is made by 2 leads with spade terminals; observe the correct polarity - red to positive, black to negative. Care must be taken to ensure that the terminals of the battery are not shorted together by metal objects, as this may constitute a Fire Hazard. The Control Cabinet is IP55 rated (to exclude dust) and is vented to avoid the build-up of gases. Do not block any vents that may be apparent.

A good mains safety earth must be connected to the cabinet housing the power supply

Where the power supply is fitted with a replaceable internal mains fuse and or battery fuse, always replace with the same type as indicated on the power supply. The fuse must be approved to BS EN 60127 or equivalent.

Power Supply Model	Mains Fuse (Time Delay)	Battery Fuse (Quick Blow)
840	T2A 20mm HBC (HRC) Ceramic	F4A 20mm Glass

### Model PS4 and 340C Power Supplies

These power supplies must be wall-mounted onto plasterboard, or a similar non-conductive material, in a protected indoor environment such as an electrical cupboard.

When fitting the power supply cable (both mains and low voltage) ensure the cable entry cut-outs in the enclosure lid are no larger than necessary for the cable diameter used and under no circumstances must they be taken beyond the outer cut-out zones.

# bellissimo Digital Video Entry System

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## Standards

This product complies with European directive 89/336/EEC on  
Electromagnetic Compatibility and Low Voltage Directive 72/23/EEC.

Emissions: Generic BSEN 50081-1

Immunity: Generic BSEN 50082-1

Low Voltage : Generic BSEN 60950



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(Telephones) Ltd



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