

Bell System (Telephones) Ltd.

bellissimo

**Video Door Entry System
BSSW Gate Controller
Installation & Operation Manual**

This manual applies to the following : –

***bellissimo* video systems**

***bellcall* audio systems**

Combined *bellissimo* and *bellcall* sites

Where a gate or gates is common to multiple blocks

***bellissimo* BSSW Gate Controller**

bellissimo BSSW Gate Controller

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bellissimo BSSW Gate Controller

Introduction

Description

The BSSW gate controller is used in two level “gate and block” applications to provide block isolation where a main gate is used to access 2 or more blocks. Each block operates independently from local entrances when not being called from the gate.

Up to 4 gates may be independently wired to each BSSW.

Each gate may consist of multiple panels and associated controllers.

Main Features

- 4 independent entrance gates per controller.
- Simple address translation to allow one button per flat panels at the block.

Design Considerations

Application

The BSSW has the main purpose of being a two level switcher and is primarily intended for gate and block architecture.

However it can also be used to apply pure block isolation if required and may be appropriate for multiple riser application.

One limitation is that there should only be three controllers of any type between the camera and the videophone. Applications with four controllers are not qualified.

Address translation can be used to allow use of one button per input panels for local “block” doors. These generate low valued and fixed addresses e.g. a BSD8 gives 1 to 8, a BSD72 gives 1 to 72. For these SW2 and SW3 allow address translation from the HIGH postal address down to the LOW local address by subtracting any number from 0 to 239. typically local addressing starts at 1, so if the postal address for that phone is N, set the total on the switches to N-1.

EXAMPLE. A scheme of small blocks has addresses “Orchard Close 1-84” and one block is 70-75. SW2 & SW3 need to add up to 69, so set SW2 to 3 (8), SW3-1 ON and SW3-2 OFF (60), SW3-3 ON and SW3-4 OFF (1) which adds up: $8+60+1=69$. Phone addresses in the block are 1-6.

Limitations

Door left open status is local to a block, that is phones in an isolated block only indicate “door open” from door controllers in that block.

When a block is in use (Busy) a call from the gate will “Fail” rather than indicate “Busy”.

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Installation & Commissioning

Checklist

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

- Ensure that 'Design Considerations' on page 4 have been understood.
- Confirm that Cat5 cable has been specified.
- Install the system according to instructions in this section.

Wiring

Refer to the diagrams from page 10 onwards as appropriate for the equipment you have.

All wiring is carried out using a mixture of Cat5 for the signal wiring and 1mm² (or greater) cores for the power wiring. Refer to the main system manuals for detailed information.

Gate Controller

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

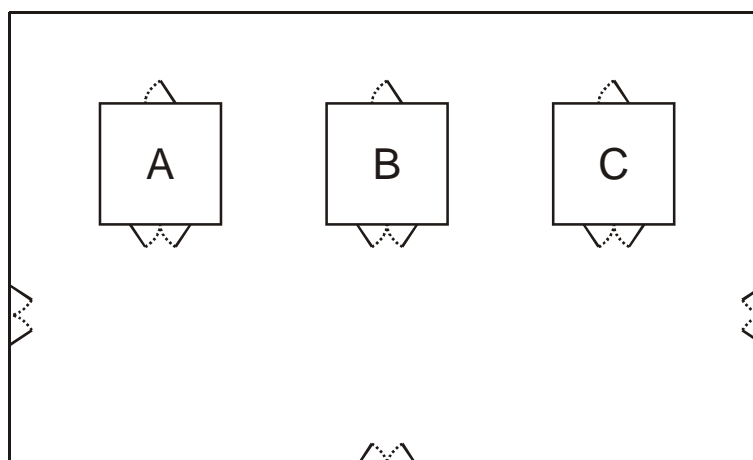
Wiring the BSSW between the local door controller(s) and the video controller(s) prevents potential camera switching problems when a gate is calling.

Gate Entrance Controller

The gate entrance controller, which is of course a door controller, should be mounted as such. The location will be site dependant in order to meet the 50m requirement.

The output Cat5 has to daisy chain from block to block in order to preserve the quality of the video signal.

In the case of two or more gate entrances, the daisy chained Cat5 cable need not take the same route, just the shortest.



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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.

It is highly recommended that the blocks are first tested with the BSSW controller bypassed. Once the block is known to be working correctly, connect the BSSW controller in order to test the gate connection.

Programming Phones Through a BSSW

Draft

When using BC801 or BSA phones in a *bellcall* system the phones need to be programmed. Phones can be programmed from a local panel or from the gate panel.

Bell System recommend that phones are pre-programmed prior to installation onto the wall, this can speed up the process and reduce the manpower requirement.

This programming can be done on site using a temporary set-up or prior to going to site using a bench set-up.

Alternatively phones can be ordered pre-programmed for a small extra cost (use part number BC801/P or BSA/P and provide a list of required numbering).

When programmed from the gate panel any address translation set at a BSSW is ignored and the phone is programmed with the address entered at the panel.

Example 1. A gate and block system has a small block with six flats and a one button per flat panel has been used locally, however the flats have postal addresses 70 through 75. The local controller uses addresses 1 to 6 and so this is the address required for the phones. The BSSW is set for an address translation of -69 so that 70 becomes 1 and so on. The phones have already been installed and so they are to be programmed from the gate. The standard programming method for the controller is used (see the correct controller manual) and the first phone (70) is programmed as 1, and then tested as 70. The phones would also be checked from the local panel.

WARNING. When the programming code is entered from the gate, all phones in the system become active and await being picked up!! To avoid any side effects it would be feasible to temporarily disconnect all but one BSSW, otherwise BEWARE!!

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Setting Up the BSSW Gate Controller / Block Isolator

There are 4 inputs for sources common to multiple blocks which can be used as termination or passthru. In a *bellissimo* video system the cable runs for passthru must be daisy chained, but for *bellcall* audio they can be star or combination wired. The terminator is for *bellissimo* video systems only.

The Input and output connections are again specific to *bellissimo* video use where the video signal is switched to maintain termination. For *bellcall* audio use they are identical.

The input and output connections are connected into the isolated block (group of phones). Door panels connected into the isolated block can only call phones within the block, whereas door panels connected to the gate inputs can call into the block whenever there is no ongoing call activity.

SW2 & SW3 Setting – Block Address Offset

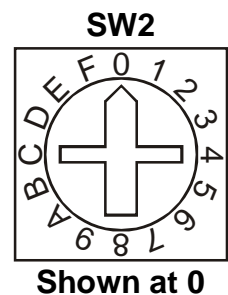
For systems where all the panels are digital, then SW2 will remain in the 0 or OFF position. All panels use the postal address so there is normally no need for translation.

However blocks tend to be small and may use one button per input panels which generate low valued and fixed addresses (BSD8=1-8, BSD72=1-72). For these SW2 and SW3 allow address translation from the HIGH postal address down to the LOW local address by subtracting any number from 0 to 239.

So for postal address N and local address 1 then set the total on the switches to N-1

Main Address Offset

SW2 Setting			
Pos	Subtract	Pos	Subtract
0	Off*	8	28
1	0	9	32
2	4	A	36
3	8	B	40
4	12	C	44
5	16	D	48
6	20	E	52
7	24	F	56



Major Address Offset DIP SW3(1-2)

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

The number in this table is added to the number in the table above to determine the subtracted amount.

SW3



OFF ↔ ON

Minor Address Offset DIP SW3(3-4)

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 the tables above to determine the subtracted amount

SW3



OFF ↔ ON

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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 the 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 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 with a meter, try pushing the probe into the wire entry point.

Quick Fault Reference

These tables provide a quick indication of the possible fault.

Call Problems	
Local Block calls.	<ul style="list-style-type: none">• Data connection is directly wired from input to output connector, so fault must be elsewhere or be a wiring fault at the interconnections. Test by bypassing the BSSW.
Gate calls.	<ul style="list-style-type: none">• Eliminate other faults by debugging the local block first.• Check the address translation if being used. Try switching it off and calling using the actual phone address. N.B. Ensure other blocks are temporarily isolated from the gate to prevent multiple phones ringing.• To check gate input, switch off address translation (SW2=0) and move the input connector to the gate connection. Make a block call.

Audio Problems	
No audio from gate.	<ul style="list-style-type: none">• Broken wire or wiring fault on the audio pair from the gate.
Loud feedback at gate.	<ul style="list-style-type: none">• Open or short circuit on audio pair.
Audio fault from block.	<ul style="list-style-type: none">• Connection is direct from input to output connector, so fault MUST be elsewhere or be a wiring fault.

Video Problems	
No Video but calls are otherwise OK.	<ul style="list-style-type: none">• Broken or shorted wiring.
Picture quality	<ul style="list-style-type: none">• Ensure that the terminators for the gate wiring are correct, just the end of the cable run is terminated.

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Specifications

BSSW Gate Controller	
Size	185mm x 230mm x 42mm
Supply Voltage	10.8V min, 13.8V typical, 15V max
Current Consumption	70mA idle @13.8V, 180mA active

PS4 Power Supply	
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

340C Power Supply	
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

840 Power Supply – Battery Backed	
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

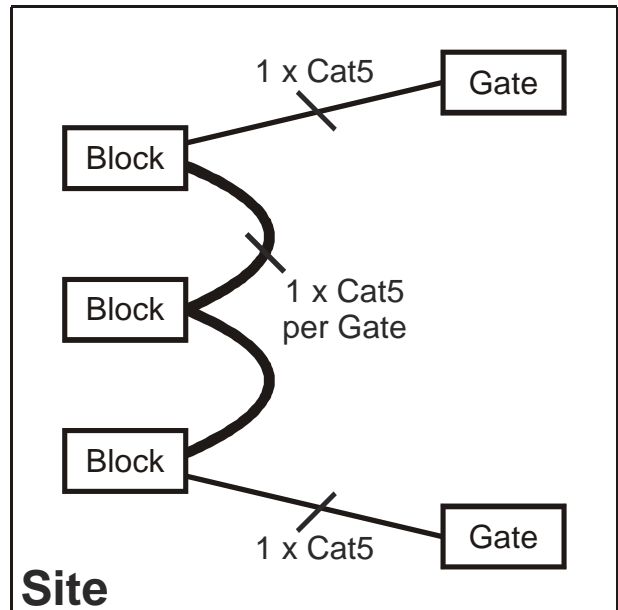
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Diagram A – bellissimo Gate and Block Wiring

Site Overview

A “Site” consist of 1 or more “Gates” and 2 or more blocks.

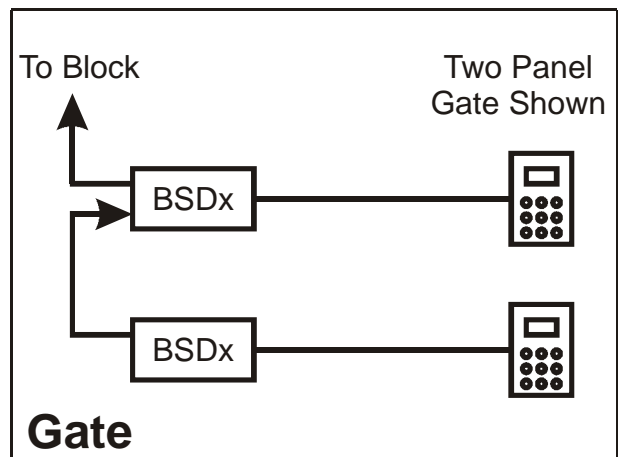
The Cat5 from each “Gate” is daisy chained around the blocks to ensure that video quality is maintained. Different “Gates” may take different routes, but aiming for the shortest runs.



Gate Detail

A “Gate” consists of 1 or more panels and associated controllers. For instance the panels may consist of a lorry panel and a car panel at a vehicle gate plus a pedestrian panel for a pedestrian gate. These can be grouped as a single logical “Gate”.

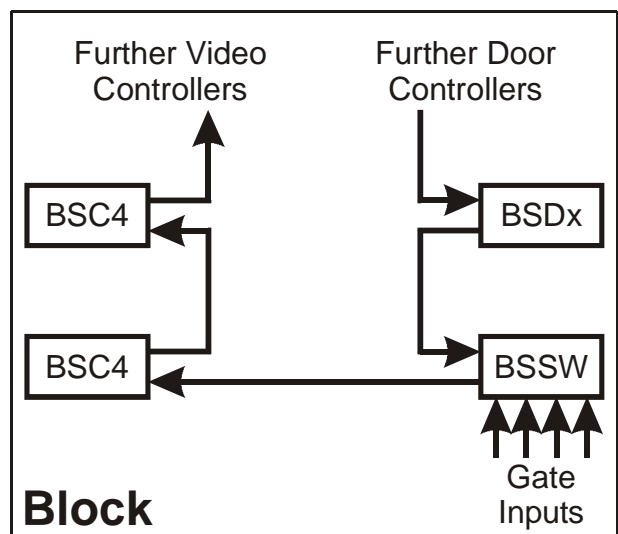
The controllers have to be within 50m of the panels in an appropriately protected housing.



Block Detail

A “Block” may either be a physical building with 1 or more entrances or just a logical collection of flats which need their wiring isolated.

Equipment consists of 1 BSSW, 1 or more BSC4's and 0 or more door controllers.



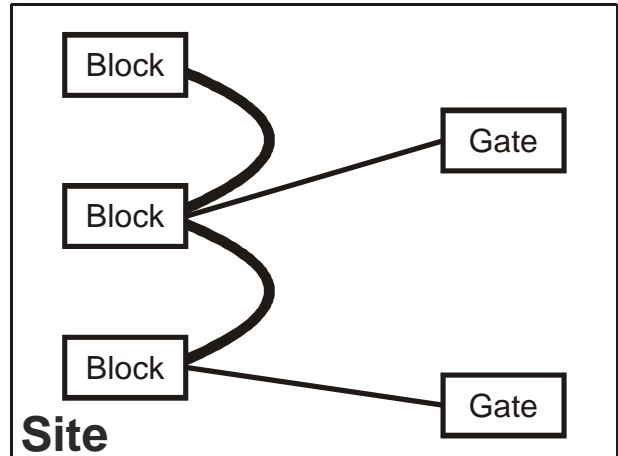
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Diagram B – bellcall Gate and Block Wiring

Site Overview

A site consist of 1 or more “Gates” and 2 or more blocks.

The wiring is shown logically with the Cat5 or telephone cable from each gate connecting to each block. There can be T or even star junctions.

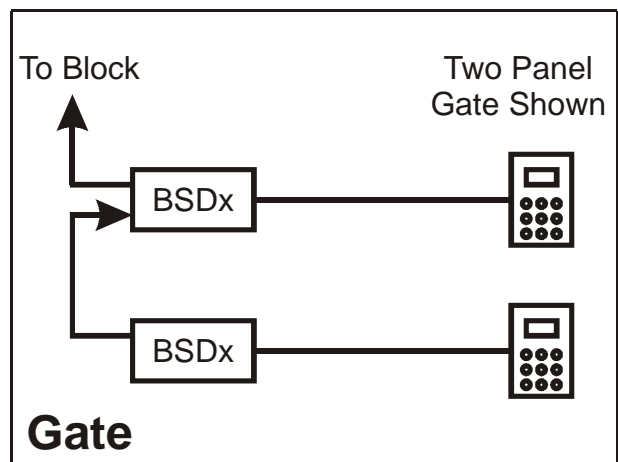


Gate Detail

A “Gate” consists of 1 or more panels and associated controllers.

The controllers may be local to the panels or up to 50m away in a dry housing or the nearest block.

Gates would normally use BSD-DIG and BCP1/VR panels due to weather exposure at the gate, where the BCP1 integrated panels are not recommended.

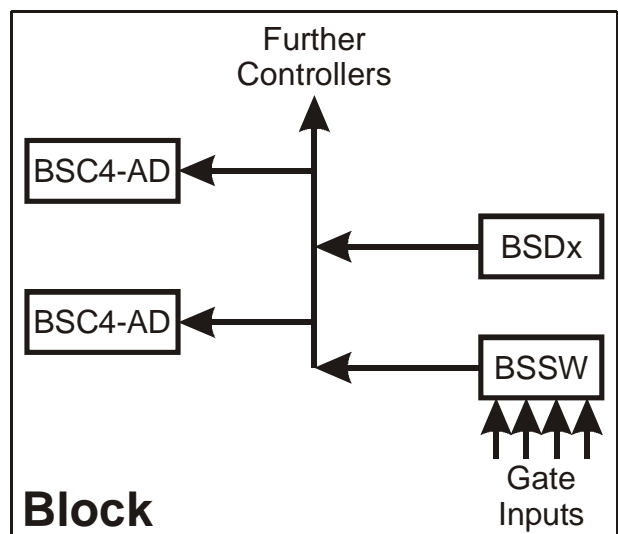
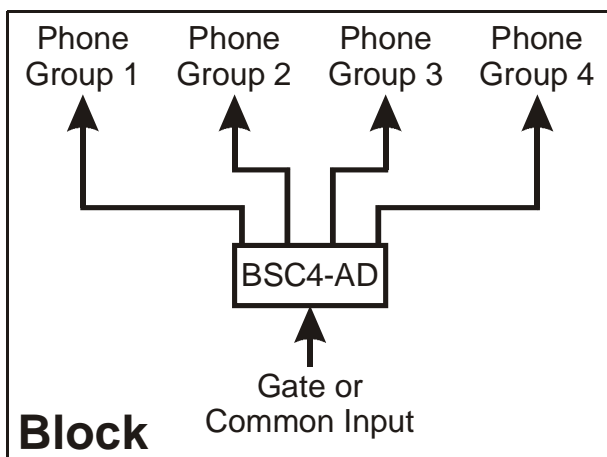


Block Detail

Each “Block” may be either a physical building or just a logical collection of flats.

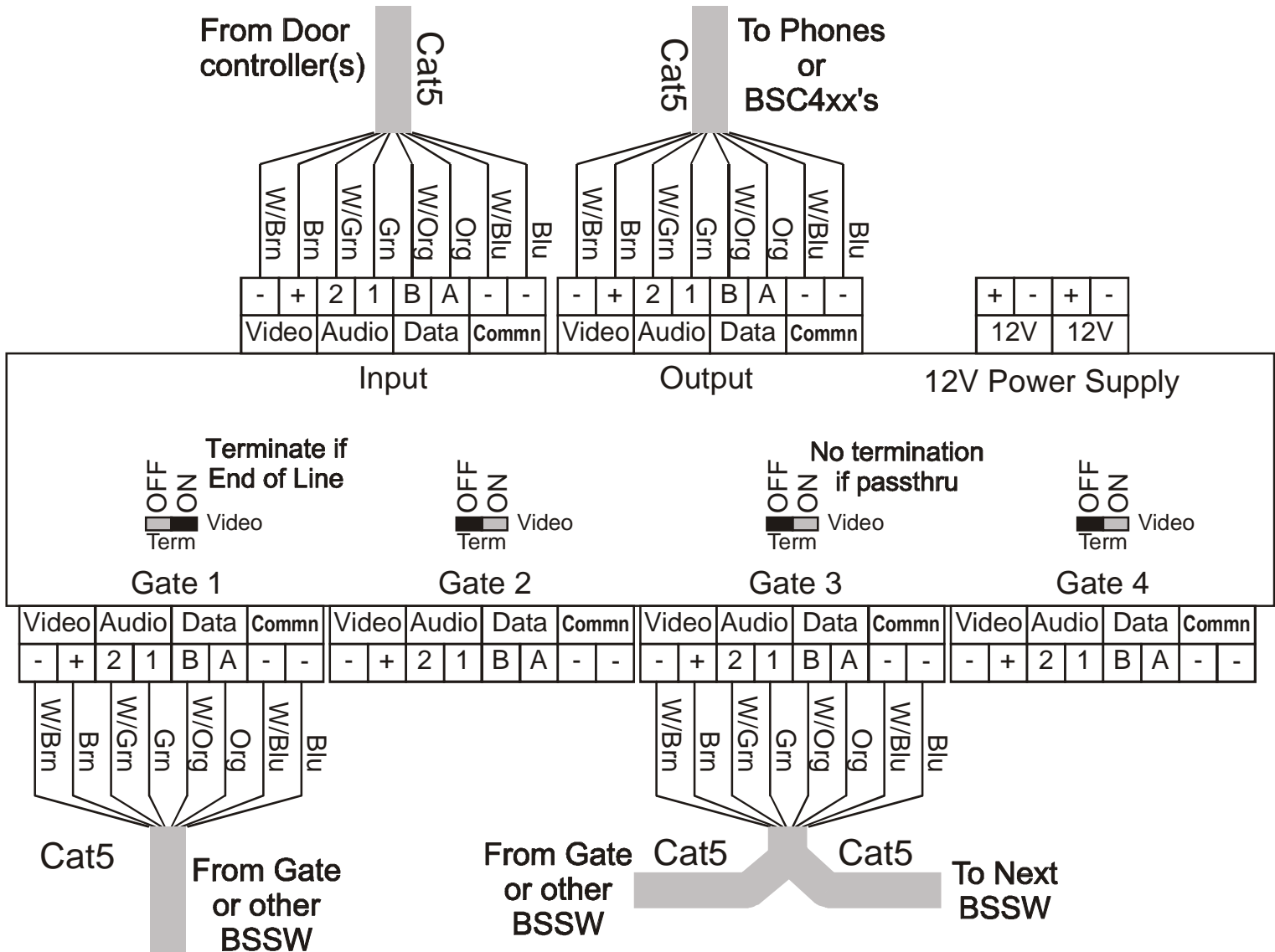
There will be a minimum of 1 or more phones and either a BSSW or 1 or more BSC4-AD's.

In addition there may be 0 or more BSC4-AD's and 0 or more door controllers.



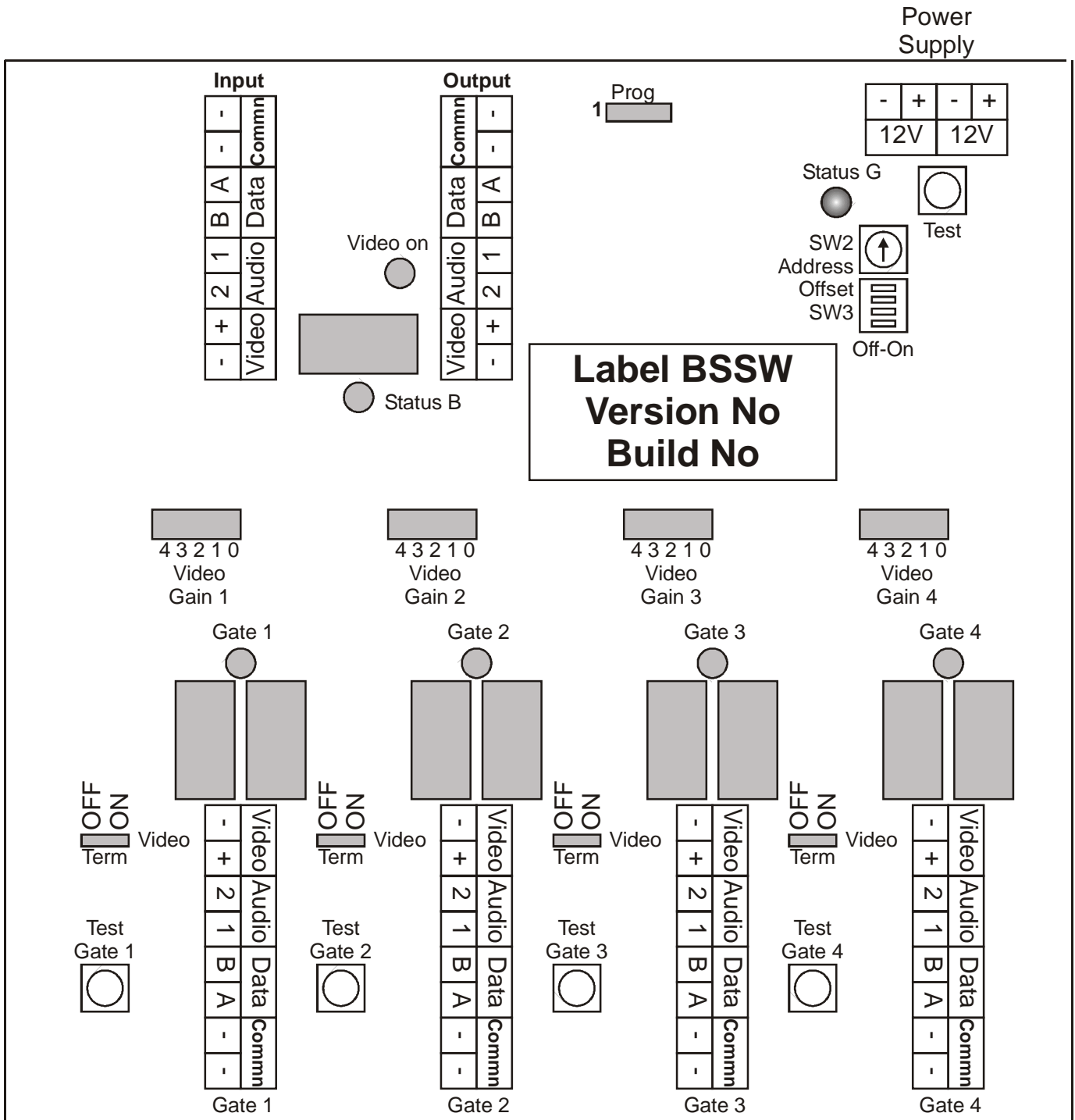
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Diagram C – BSSW Gate Switcher Detail Wiring



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Diagram D – BSSW Gate Switcher PCB Layout



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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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BS EN ISO 9001:2000 Certificate number GB2000389