

Bell System (Telephones) Ltd.

bellissimo

digibell

BSSW Block Isolator Installation & Operation Manual

This manual applies to the following : –

***bellissimo* video systems**

***bellcall* audio systems**

***digibell* audio systems**

Combined system sites

Where an entrance is common to multiple groups of flats

BSSW Block Isolator

BSSW Block Isolator

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BSSW Block Isolator

Introduction

Description

The BSSW Block Isolator is used where two or more groups of flats are accessed via a common entrance in addition to their private entrance. Isolation prevents a called flat in one group opening the door for access to another group. Each block operates independently from local entrances when not being called from the common entrance.

The common entrance is usually a gate, but can be any entrance controlled by a bellissimo door controller, and connected to one of the 4 BSSW inputs.

Each entrance may consist of multiple panels and associated controllers.

Main Features

- 4 independent entrances or gates per isolator.
- 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 classic gate and block architecture.

However it can also be used to apply pure block isolation if required and may be used for multiple riser applications to keep cable runs shorter.

One limitation is that there should only be one BSSW controller between the door and the telephone.

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. Extended addressing is now also available, see Page 8.

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.

WARNING. Actual postal addressing is needed early in the planning stage to avoid costly changes later. Contact Technical Support for help and options.

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”.

BSSW Block Isolator

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 11 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.

Block Isolator

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

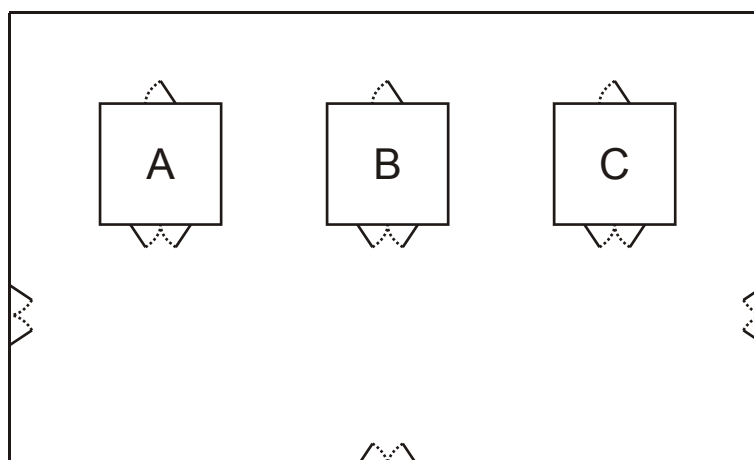
Wiring the BSSW between the local door controller(s) and the video controller(s) prevents potential camera switching problems when a gate is calling.

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.



BSSW Block Isolator

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 switcher bypassed. Once the block is known to be working correctly, connect the BSSW switcher in order to test the gate connection.

Programming Phones Through a BSSW

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 recommends 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).

Otherwise phones may be programmed in situ, but this requires two people and it helps to have an independent method of communication (mobile phone or walkie talkie). Follow the procedure in the BS Digital manual PD105.

Address Translation

When programmed from the gate panel the BSSW automatically ignores any address translation set and the phone is programmed with the address entered at the panel. But the test call must use the postal address as the address translation is back in effect.

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 72 through 77. The local controller is using addresses 1 to 6 and so these are the addresses required to be entered at the panel. The BSSW is set for an address translation of -71 so that 72 becomes 1 and so on. The phones have already been installed and so they are to be programmed from the gate. The first phone (Flat 72) is programmed as 1, and then tested as 72. The rest of the phones are programmed in a similar manner, and then all 6 phones can also be checked by calling 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, from residents picking up another phone, it would be feasible to temporarily disconnect all but one BSSW, otherwise **BEWARE!!**. Normally the first phone picked up will signal all the other phones to return to idle, but in some complex installations this cannot be guaranteed. In the case of a problem the best solution is to hang up the phone and try again once the system has returned to idle.

BSSW Block Isolator

Setting Up the BSSW Block Isolator / 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

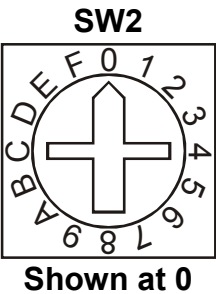
For systems where all the panels are digital, then SW2 will remain in the 0 or OFF position. All panels use the postal address so there is normally no need for translation.

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)

1	2	Offset
Off	Off	0*
On	Off	60
Off	On	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)

3	4	Offset
Off	Off	0*
On	Off	1
Off	On	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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Prog Header Jumpers (From Build 2)

The header marked Prog. Can be used to extend the address offset above 239.



Default



Jumper 1



Jumper 2

Jumper 1 Position (from build 2)

When the Jumper is fitted in position 1 when fitted adds an extra 240 to the number to be subtracted.

Jumper 2 Position (from build 2)

When the Jumper is fitted in position 2, SW3 is used as in the following table.

The value in corresponding to the switch settings is added to the value to be subtracted.

Typically this will be used where blocks or floors are numbered from 101... 201... etc.

SW3				Add Value
1	2	3	4	
Off	Off	Off	Off	100
On	Off	Off	Off	200
Off	On	Off	Off	300
On	On	Off	Off	400
Off	Off	On	Off	500
On	Off	On	Off	600
Off	On	On	Off	700
On	On	On	Off	800
Off	Off	Off	On	900
On	Off	Off	On	1000
Off	On	Off	On	1100
On	On	Off	On	1200
Off	Off	On	On	1300
On	Off	On	On	1400
Off	On	On	On	1500
On	On	On	On	1600

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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.	• 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.	• 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.	• Broken wire or wiring fault on the audio pair from the gate.
Loud feedback at gate.	• Open or short circuit on audio pair.
Audio fault from block.	• 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.	• Broken or shorted wiring.
Picture quality	• Ensure that the terminators for the gate wiring are correct, just the end of the cable run is terminated.

BSSW Block Isolator

Specifications

BSSW Block Isolator	
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

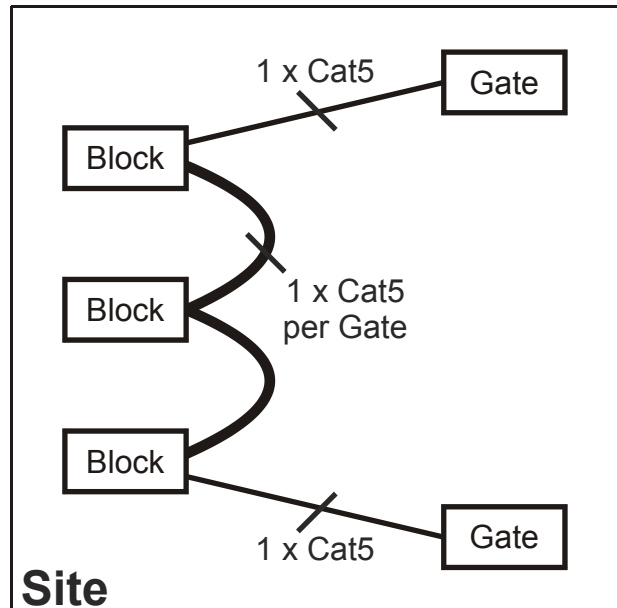
BSSW Block Isolator

Diagram A – bellissimo Gate and Block Wiring

Site Overview

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

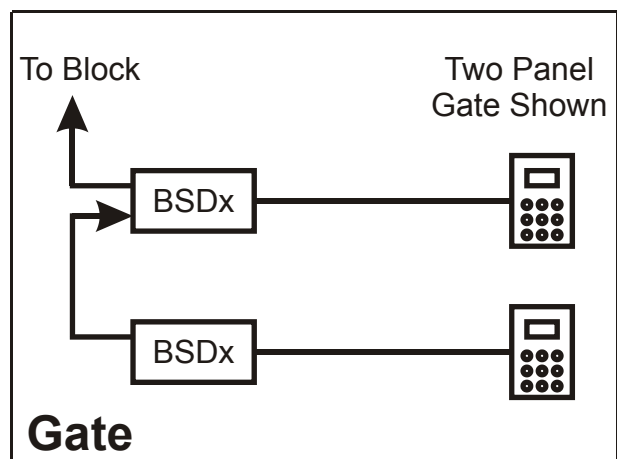
The Cat5 from each “Gate” is daisy chained around the blocks to ensure that video quality is maintained. Different “Gates” may take different routes, but aiming for the shortest runs.



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”.

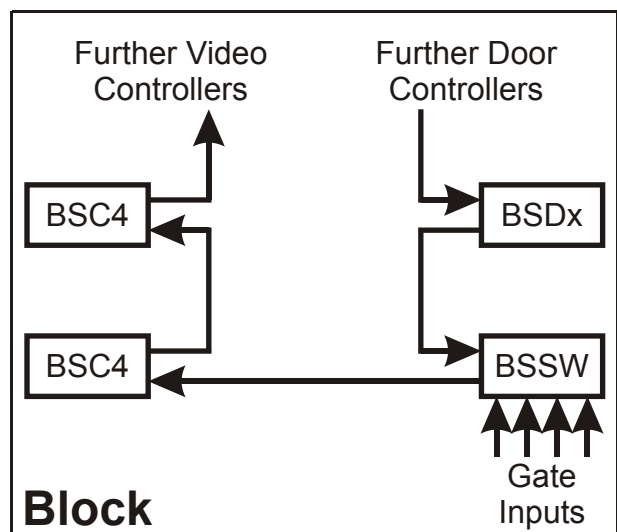
The controllers have to be within 50m of the panels in an appropriately protected housing.



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.



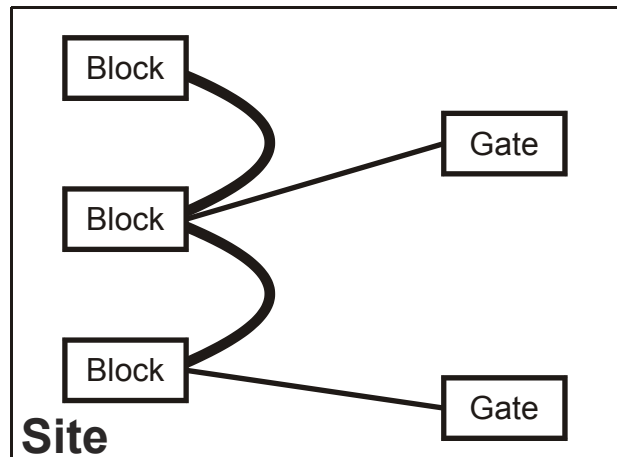
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Diagram B – belca// Gate and Block Wiring

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.

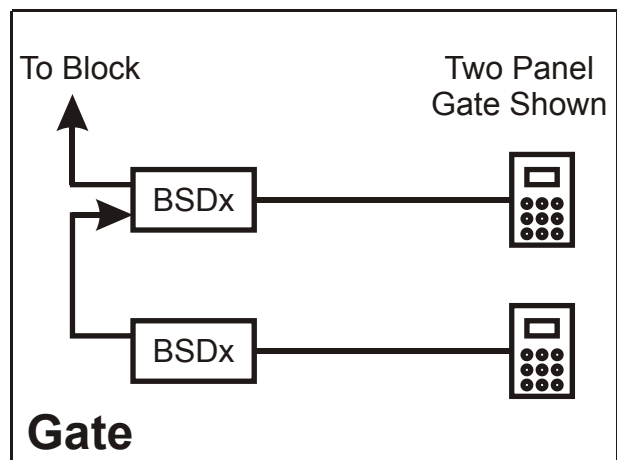


Gate Detail

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.

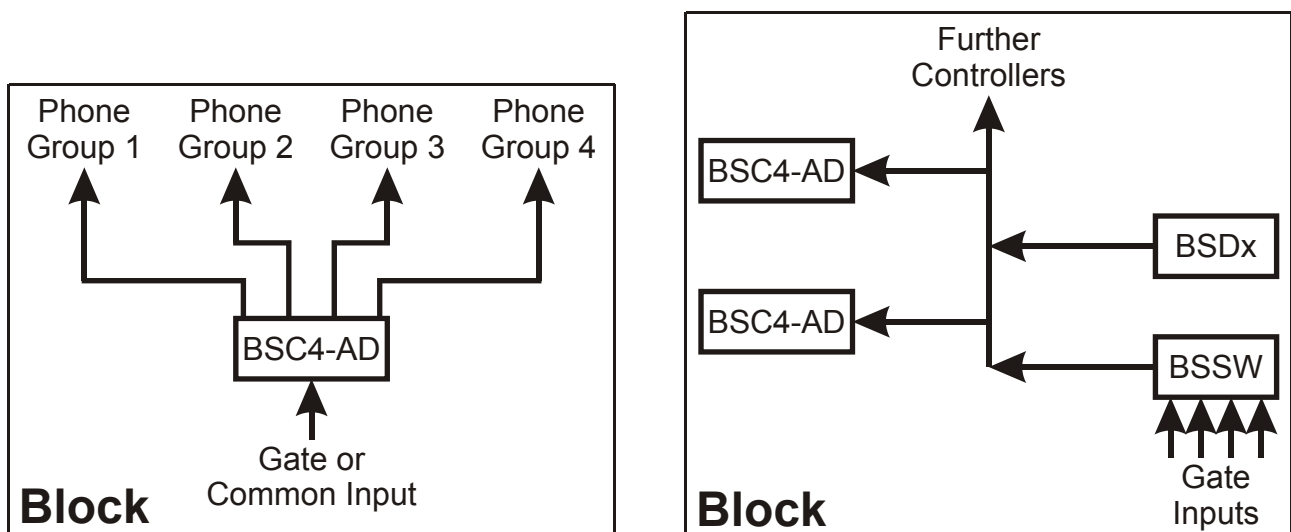


Block Detail

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

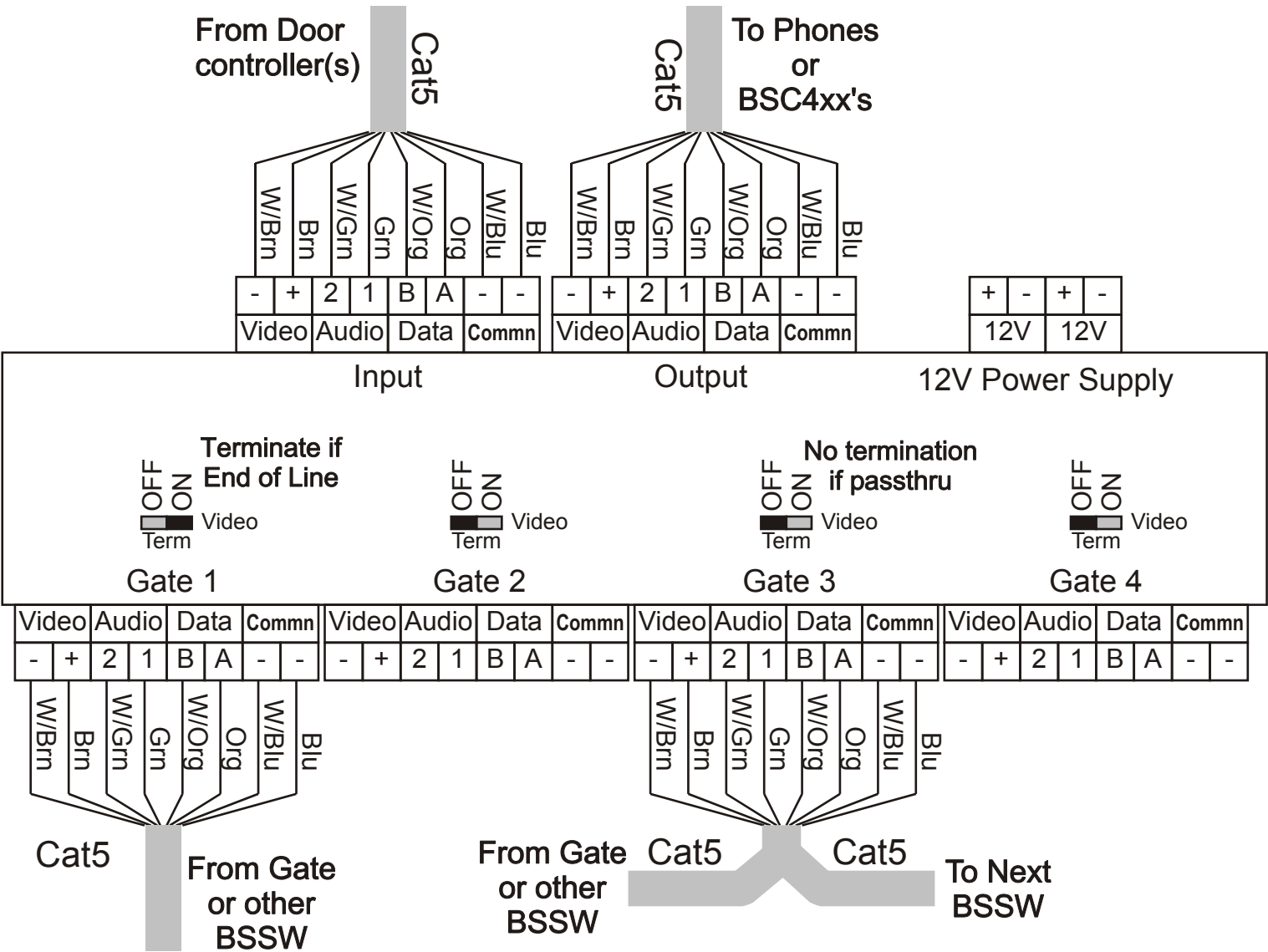
There will be a minimum of 1 or more phones and either a BSSW or 1 or more BSC4-AD's.

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



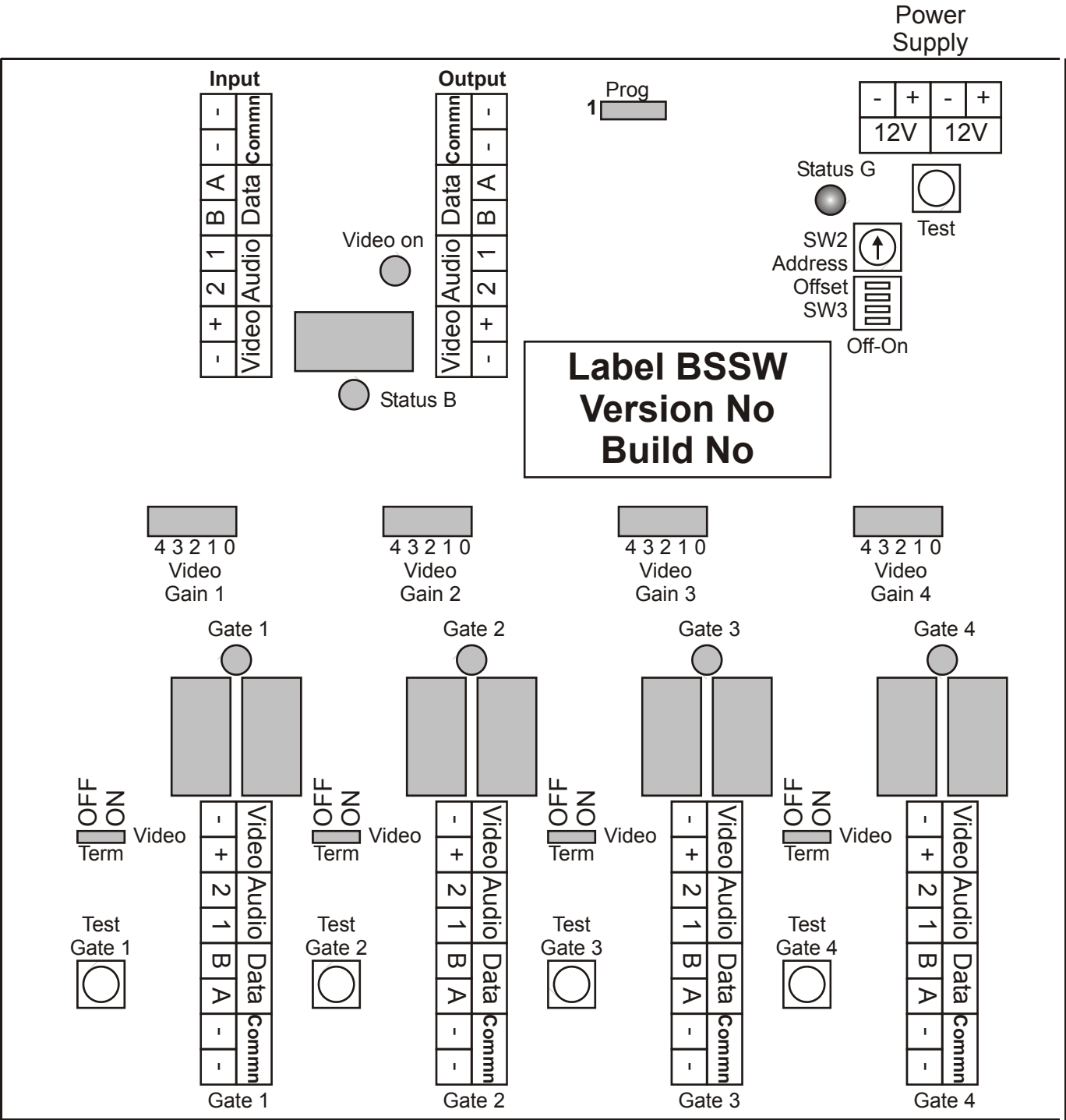
BSSW Block Isolator

Diagram C – BSSW Block Isolator Detail Wiring



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Diagram D – BSSW Block Isolator 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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