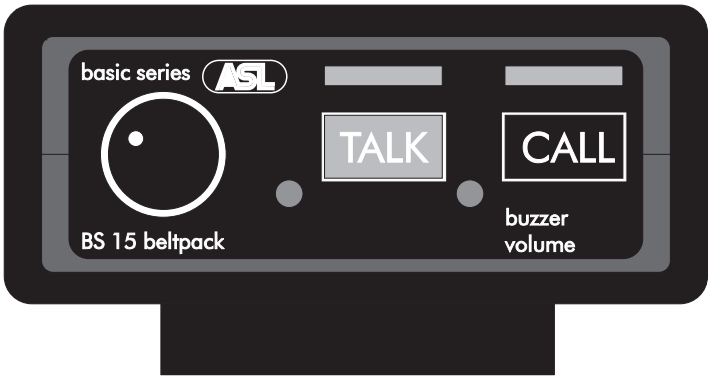
BASIC SERIES

USER MANUAL

FOR THE

BS 15

SINGLE CHANNEL BELTPACK



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1.0 GENERAL DESCRIPTION

The BS 15 is a portable single channel user station housed in a strong ABS case.

On the front panel are a Volume (listen level) control, a Talk and a Call button with LED indicators, a sidetone trimmer and a buzzer volume.

Special attention has been paid to the intelligibility of speech. By applying low noise/high speed opamps, a speech presence filter and a specially developed amplifier, communication is very comfortable even in environments with a very high background noise level.

The unique ASL CALL system provides both a flashing red LED and a very distinctive and characteristic sound signal. Smooth operation is guaranteed with the CALL button. A momentary push makes the red LED flash, whilst holding the button for two seconds will activate the CALL sound signal. The volume of the sound signal (buzzer) can be adjusted at the front panel.

2.0 UNPACKING

The shipping carton contains the parts listed below:

* The BS 15
* User manual

If any are missing, contact your dealer.

ASL has taken great care to ensure this product reaches you in flawless condition.
After unpacking the unit please inspect for any physical damage to the unit, and retain the shipping carton and relevant packing materials for use should the unit need returning.

If any damage has occured, please notify your dealer immediately so that a written claim can be initiated. Please also refer to the guarantee section of this manual.

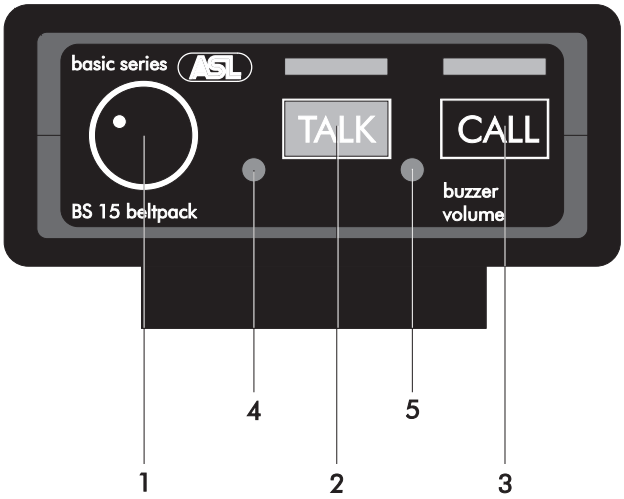
3.0 INSTALLATION

This BS 15 will form part of an existing or new intercom system, and connection to it is straightforward. There are no separate power connections, or batteries to install, as the necessary DC voltages are derived from the intercom master station or power supply, via the intercom connecti-on cable.

To connect the BS 15 onto the intercom system, use professional flexible microphone cable with 2 wires and 1 shield only. Connect the system intercom cable into the LINE connector socket on the rear panel. Finally connect the headset plug into the HEADSET connector, also on the rear panel.

The BS 15 is fully protected against mis-wiring (reverse power) or short-circuit in the interconnecting cables.

4.0 FRONT PANEL CONTROLS



1 VOLUME control knob
This knob adjusts the listen level for the headset.

2 TALK button
This push button activates the headset microphone, the large green LED indicates if the microphone is switched on.

3 CALL button
This push button activates the call system.
A momentary push will send a call signal to all stations connected to the intercom channel and the call LEDS will start flashing.
Press and hold the button for 2 seconds will activate the call buzzer.
After the CALL button is released the LEDS will continue to flash for further 2 seconds.

4 SIDETONE trimmer
This trimmer adjusts the level of your own voice as you hear it in your headset.

Adjustment procedure :
- set trimmer in start position : fully clockwise.
- switch off the microphone of all connected (speaker!) stations.
- switch on the microphone of the BS 15.
- turn up volume.
- speak into the headset microphone.
- adjust the listen level by turning the sidetone trimmer.

The operating area is between fully clockwise and minimum level. Adjusting the sidetone does not affect the level of your voice as it is heard by other stations.

5 BUZZER VOLUME trimmer
This trimmer adjusts the volume of the internal buzzer, which is located behind the front panel.
The buzzer is activated if you press the CALL button of the BS 15 (3) or a CALL button of any other station (on the channel to which the BS 15 is connected), longer than 2 seconds.

5.0 REAR PANEL CONNECTORS

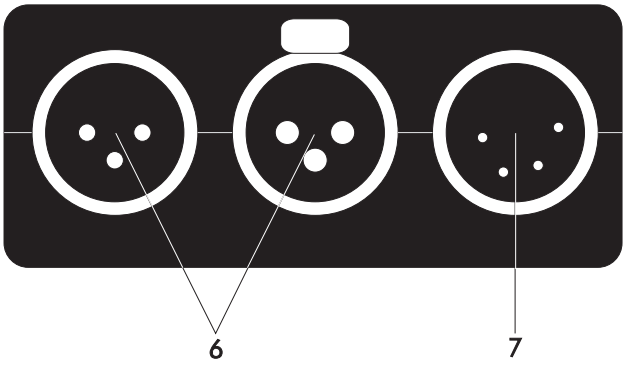
6 LINE connectors

These XLR-3 connectors are for connecting the BS 15 to the intercom system.

Pin assignments:

1. 0 V / ground shield
2. +30 V power wire
3. audio wire

The female connector is for input.
The male connector is for extending the intercom line to other user stations.



7 HEADSET connector

An XLR-4 type connector for the connection of the local headset. This must have a can impedance of 200 ohms (or greater), or each minimum 400 ohms when in parallel. The mic may be of the dynamic or electret type.

Pin assignments:

1. Shield mic. (GND)
2. mic. +
3. phones +
4. phones - (GND)

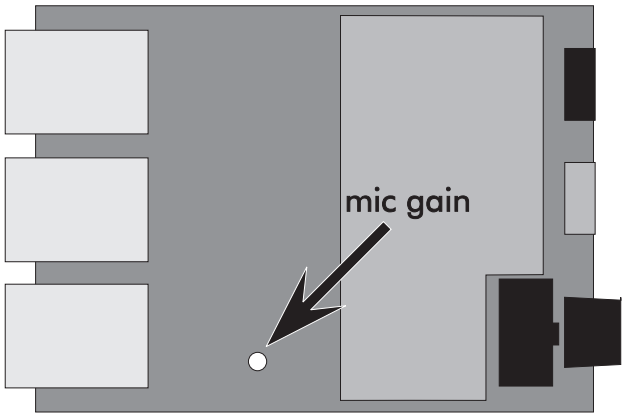
6.0 INTERNAL CONTROLS

MIC GAIN

The mic gain can be adjusted internally by a trimmer.

- Open the BS 15 by removing the four screws on the underside.
- The trimmer is located on the lower PCB board.

  To increase mic gain turn clockwise.
  To decrease mic gain turn counterclockwise.



7.0 CABLING

For the BASIC Series Intercom system the interconnecting cables are of the shielded two-conductor microphone cable type and the intercom line connectors are of the XLR-3 type. Audio and Call signals are on XLR pin 3, DC power is on XLR pin 2. XLR pin 1 is connected to the shield of the cable which functions as the common return for audio and power.

Since the audio signal is transferred in an **unbalanced ★** way, certain rules have to be obeyed when installing the cables of an intercom network. This is to avoid earth loops and to minimize power loss and the possible effect of electromagnetic fields.

These rules are:

- **Use high quality (multipair) cable.**
  For interconnecting user stations, power supplies and accessories in an ASL Intercom network, use high quality shielded two-conductor (minimum 2x 0.30 mm2) microphone cable only.
  In case of a two channel intercom network, use high quality microphone 'multipair' cable only, each pair consisting of two conductors (minimum 2x 0.15 mm2) with separate shield. Multipair cable should also have an overall shield.

- **Use flexible cables.**
  Use flexible single and multipair microphone cable instead of cable with solid cores, especially when the cable is subjected to bending during operation or installation.

- **Separate cable screen to XLR pin 1.**
  The screen of each separate microphone cable and/or the screen of each single pair in a multipair cable, should be connected to pin 1 of each XLR-3 connector. Do not connect this cable screen to the metal housing of the connector or to metal wall boxes (outlets).
  See page 10 for Earthing Concept.

- **Cable trunks, connection boxes and overall multipair cable screen to clean earth.**
  Metal cable trunks, metal connection boxes and overall multipair cable screen should be interconnected and, at one point (the 'central earthing point') in the intercom network only, be connected to a clean earth or a safety earth.
  See page 10 for Earthing Concept.

- **Keep metal connection boxes and cable housings isolated from other metal parts.**
  Metal housings for intercom cables and connectors should be mounted in such a way that they are isolated from other metal cable and connector housings and from any other metal construction parts.

★ **See Party Line, Technical Concept**

- **Keep cables parallel as much as possible.**
  When two (two channel) units in a network are connected by more than one cable, make sure that these cables are parallel to each other over the whole distance between those units. When using multipair cable, parallelism is ensured in the best possible way.

- **Avoid closed loops.**
  Always avoid that cables are making a loop. So-called 'ring intercom' should not physically be cabled as a ring. All cable routes should have a 'star' configuration, with the central earthing point (usually close to the power supply position) as the centre of the star.

- **Keep cables away from electromagnetic sources.**
  Keep intercom cables away from high energy cables, e.g. 110/220/380V mains power or dimmer controlled feeds for spotlights.
  Intercom cables should cross high energy cables at an angle of 90° only.
  Intercom cables should never be in the same trunking as energy cables.

- **Place power supply in a central position.**
  In order to avoid unacceptable power losses, place the power supply as close as possible to where most power consumption occurs or, in other words, most user stations are placed.

- **Connect ASL power supply to a 'clean' mains outlet.**
  The ASL power supply may be connected to the mains power outlet to which other audio equipment is connected. Avoid using mains outlets which also power dimmer controlled lighting systems.

In case of more complex installations, don't hesitate to contact us. Please send us a block diagram of the planned network with a list of all user stations and their positions, and we are happy to advise you on cabling lay out.

8.0 PARTY LINE, TECHNICAL CONCEPT

ASL's BASIC Series offers a complete two way ('full duplex') communications system.
Users of the system are connected via a 'party line'. Master stations (with built-in power supply), beltpacks and power supplies are interconnected via standard microphone cable. One wire is used as an audio line, one as a power line and the screen of the cable functions as earth/return.

Current drive is used for signal transfer. Each station utilises a current amplifier to amplify the microphone signal and place it on the common audio line where, due to the constant line impedance (situated in the power supply between XLR pin 3 and 1), a signal voltage is developed which can be further amplified and sent to the headphones.

This principle has three advantages:
- the use of a single audio line allows several stations to talk and listen simultaneously.
- due to the high bridging impedance offered by each station, the number of stations 'on line' has no influence on the level of the communications signal.
- power and audio to the intercom stations use the same cable.

The Call signal is also sent as a current on the audio line. It develops a DC potential over the line impedance which will be sensed by each station and interpreted as a Call signal.

9.0 GUARANTEE

This unit is warranted by ASL Intercom to the original end-user purchaser against defects in workmanship and materials in it's manufacture for a period of one year from date of shipment to the end-user.

Faults arising from misuse, unauthorised modifications or accidents are not covered by this warranty. If the unit is faulty it should be sent in it's original packing, to the supplier or your local ASL dealer, with shipping prepaid. A note must be included stating the faults found and a copy of the original suppliers invoice.

THIS PRODUCT WAS DESIGNED, DEVELOPED AND MANUFACTURED BY:

AMPCO SOUND LAB BV
MAARSSEN (UTRECHT) HOLLAND.

10.0 TECHNICAL SPECIFICATIONS BS 15

POWER CONSUMPTION

current (at 30 V DC)	18 mA quiescent
	35 mA signalling
	80 mA at max. output + signalling

MIC. PREAMP

mic. impedance	200 ohms
gain	40 dB - 70 dB (adjustable internally)
presence filter	+6 dB at 5 kHz
frequency response	200 Hz - 13 kHz (-3 dB)
V electret mic	+9 V DC

HEADPHONES DRIVER AMP

max. load	200 ohms
max. output level	8 V rms (200 ohms)
max. output power	0.16 W rms (each headset can)

INTERCOM LINE DRIVER

max. output current	3 mA rms
output impedance	> 150 Kohms

SIDETONE

rejection	0 - 30dB adjustable

BUZZER

max. SPL	100 dBA

DIMENSIONS AND WEIGHT

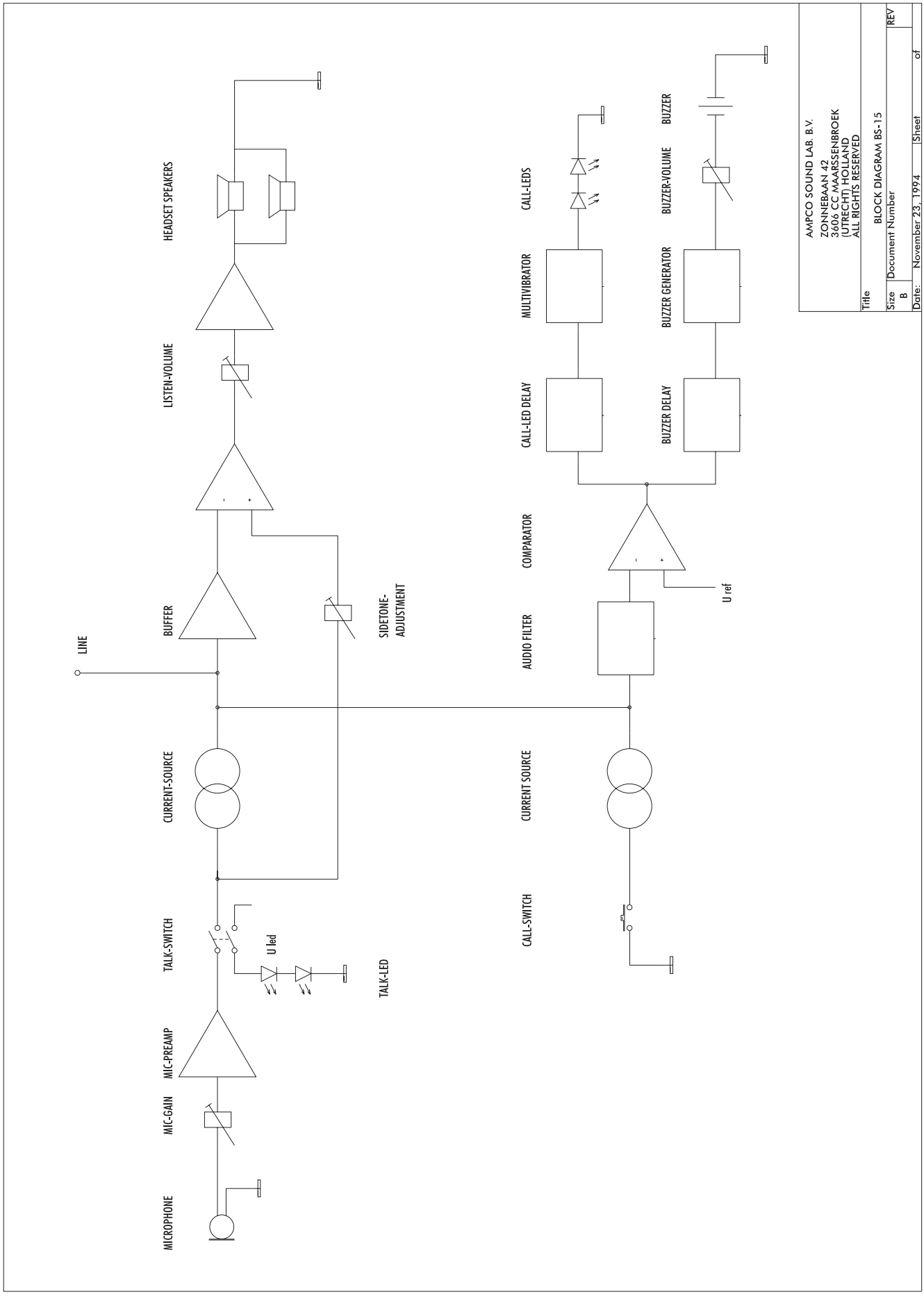
width	90 mm
height	38 mm
depth	124 mm
weight	260 gramms

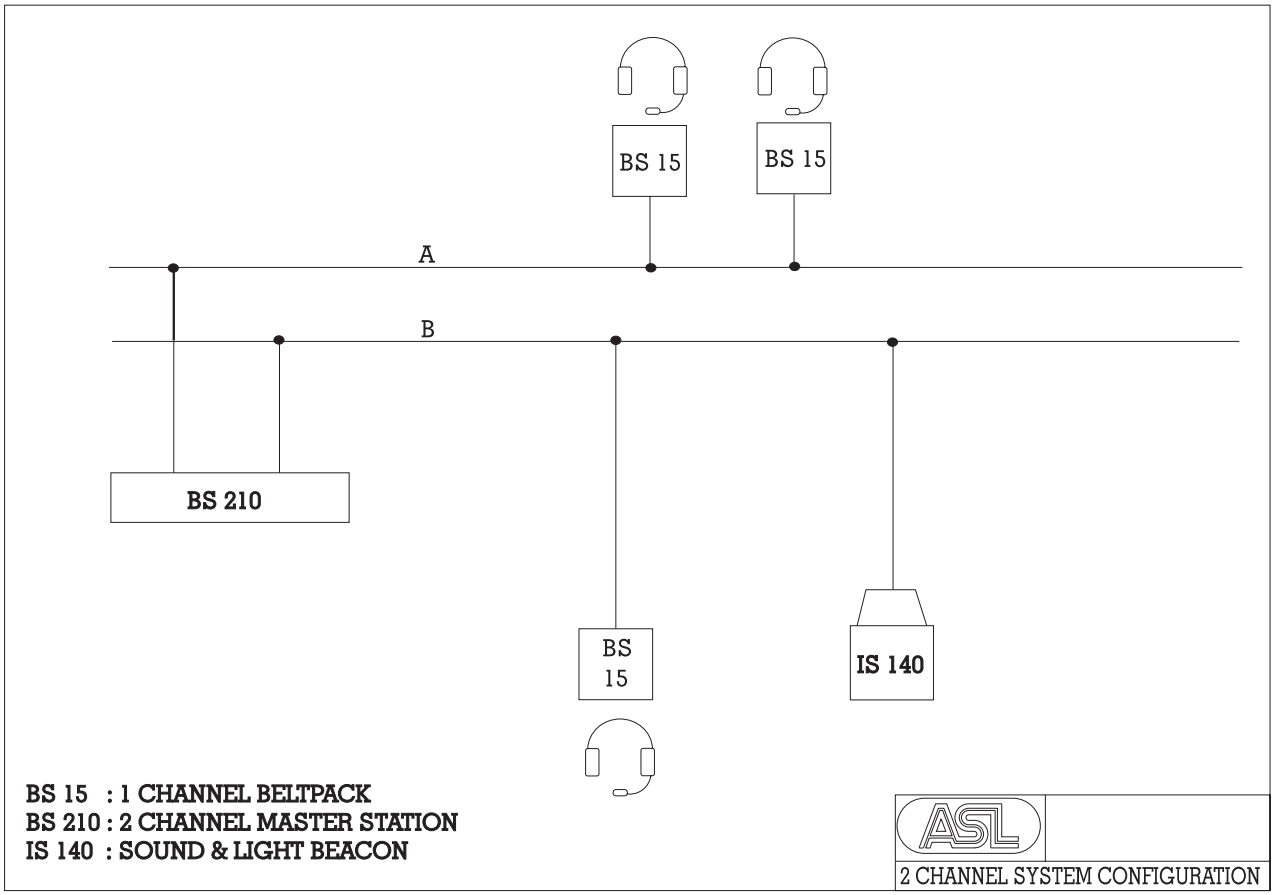
GENERAL SYSTEM SPECIFICATIONS

intercom line impedance	350 ohms (1kHz)
	2.2 Kohms (DC)
intercom line audio level	nom. -18 dBu
	max. +4 dBu
dynamic range	80 dB
call send signal	+2.8 mA
call receive signal threshold	+2.4 V DC
supply voltage	+30 V DC (12 V to 32 V)

Note : 0dBu = 775 mV into open circuit

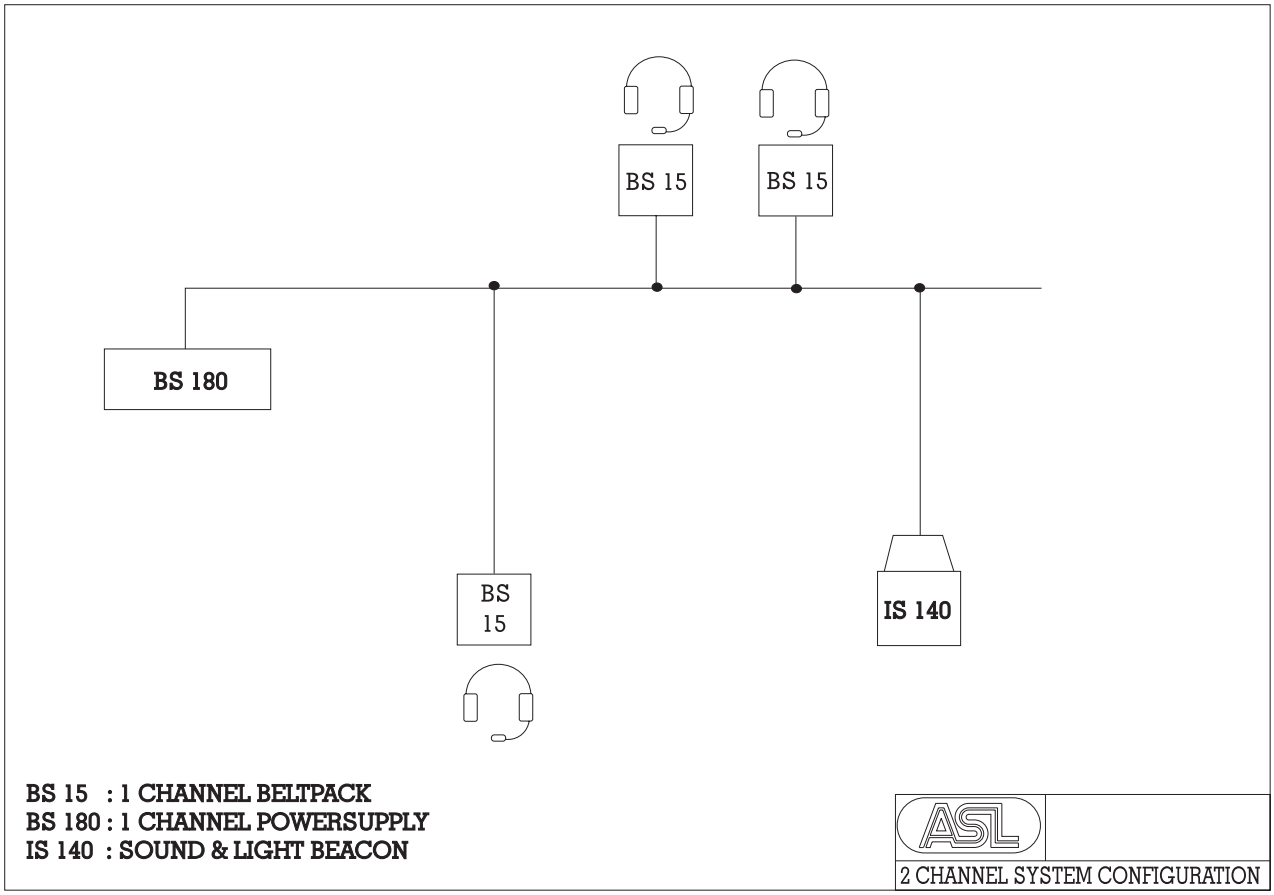
ASL reserves the right to alter specifications without further notice.





BS 15 : 1 CHANNEL BELTPACK
BS 210 : 2 CHANNEL MASTER STATION
IS 140 : SOUND & LIGHT BEACON

2 CHANNEL SYSTEM CONFIGURATION



BS 15 : 1 CHANNEL BELTPACK
BS 180 : 1 CHANNEL POWERSUPPLY
IS 140 : SOUND & LIGHT BEACON

2 CHANNEL SYSTEM CONFIGURATION