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CANFORD AUDIO PLC
CROWTHER ROAD, WASHINGTON
TYNE & WEAR, NE38 0BW. UK

admin 0191 418 1000
sales 0191 418 1122
fax 0191 418 1001

technical data

LS300 SERIES TALKBACK LOUDSPEAKER STATIONS

27-311 TECPRO LS311T Loudspeaker station, single circuit, metal case
27-312 TECPRO LS312T Loudspeaker station, multi circuit, metal case
27-321 TECPRO LS311F Loudspeaker station, single circuit, flushmount
27-322 TECPRO LS312F Loudspeaker station, multi circuit, flushmount
27-331 TECPRO LS331 Loudspeaker station, single circuit, rackmount
27-332 TECPRO LS332 Loudspeaker station, multi circuit, rackmount
27-341 TECPRO LS311TW Loudspeaker station, single circuit, wood case
27-342 TECPRO LS312TW Loudspeaker station, multi circuit, wood case

1 CONNECTING THE STATION TO THE SYSTEM

"Loop-Through" Wiring - Two parallel wired connectors are provided on most stations to allow wiring to be looped through and on to the next station if required. The female connector is used as the input and the male connector as the output by convention.

LS311/T and LS331 Single circuit stations - Use 2-core screened cable and connect as shown in diagram (1) using XLR-3 type connectors.

LS311/F Flush mount single circuit stations - For ease of installations, these are provided with a plug which connects to incoming wiring using screw terminals. Wire as shown in diagram (2) using 2-core screened cable.

LS312/F Flush mount multi-circuit stations - For ease of installation, these are provided with a 12 pin plug which connects to incoming wiring using screw terminals. Wire as shown in diagram (3) using multi-conductor individually screened cable for best performance. Overall screened cable will work but will suffer crosstalk between circuits when used over larger distances.

LS312/T and LS332 Multi-circuit stations - These are provided with 6 pin Neutrik type XLR connectors. Up to 4 circuits can be connected. Connect according to diagram (4) using multi-conductor individually screened cable.

Wiring instructions for all types should be attached to the station.

2 BASIC OPERATION

Operation varies slightly when the station is used with built-in loudspeaker alone, headset, or plug-in microphone.

Loudspeaker only operation

The function switch on the right of the unit is the main operation control.

OFF - The loudspeaker is silent. The signal lamp will still operate, to attract your attention if required.

If a headset or accessory microphone is in use, they are unaffected by this switch position.

LISTEN- The loudspeaker will be on, the volume control can be used to set a suitable level.

TALK - Allows you to speak to the circuit. The switch has a momentary action and will spring back to **LISTEN** when released. It switches off the loudspeaker and uses it as a microphone. Tone correction is applied to produce clear speech. You may then speak normally so long as the switch is pressed, and you will not hear the circuit through the loudspeaker.

HEADSET OPERATION

A Tecpro compatible headset wired as in diagram (5) can be plugged into the station's front panel socket. Internal circuitry automatically mutes the loudspeaker when the headset is plugged in.

MIC ON/OFF - Located on the left of the Signal Light switch, this is a latching key which activates the headset mic to speak to the system. The microphone amplifier gain is factory set to suit most dynamic headset microphones. It contains a limiter/compressor which prevents system overload.

The volume control now controls the headset listen level.

TALK -Still can be used to speak to the system if required through the loudspeaker. In headset use the 'Off/Listen/Talk'switch is normally not used and has no affect on headset operation.

3 USE WITH ACCESSORY MICROPHONES

LSM-1 PLUG-IN GOOSENECK MICROPHONE

An LSM-1 or equivalent microphone can be plugged into the front panel socket instead of a headset. This can convert the LS300 series station to hands-free 2-way operation. In this case the Mic 'On/Off' switch activates the plug-in mic. The loudspeaker will simultaneously receive the circuit audio and is controlled by the 'Off/Listen/Talk' switch and volume control.

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Hands-free 2-way speech using the plug-in microphone must be used with care to prevent system feedback. Because of the close proximity of the loudspeaker to the microphone the sidetone requires very careful adjustment. This is because a portion of the sound re-entering the microphone can be re-amplified and leads to 'howl round'. Follow the instructions in the Sidetone Adjustment in section (5) below.

Important Note: Sidetone cancellation and stability are excellent at any single LS300 station, preventing the local mic 'howling around' through the local loudspeaker from local speech. In systems with several LS300 stations using the LSM-1 for hands free speech acoustic feedback can take place around the system. This is dependant on the loudspeaker levels and room acoustic properties. Tecpro recommends use of only one LS300 station in this mode in any one circuit. Operation of more than one station in this mode should be undertaken with care. Please consult ourselves or your dealer for advise.

HH5 Fist Mic

Because of the omni-directional nature of the internal loudspeaker/microphone, its use (by pressing the **TALK** switch) in a noisy environment is unsuitable. This is due to the amount of background noise that can be picked up.

The HH5 fist microphone is plugged into the headset socket. Loudspeaker operation is not affected. Mic On/Off should be switched 'On'. Holding the HH5 close to the mouth and speak while pressing the push switch on its side. Clear speech without such background sound will be heard on the rest of the system.

4 SIGNAL LIGHT OPERATION

The SIGNAL pushbutton flashes a light in all outstations connected to your circuit. It is used to attract the attention of a user that has a headset removed or station switched off.

This light signal capability can be used for other special purposes such as activating transmit to a radio system connected via an AD913 Radio Interface Adapter.

5 SIDETONE ADJUSTMENT

Headset Use

The level of your voice in your headset, is called 'sidetone'. When using a headset this level is fixed and the sidetone control is inactive. The fixed level suits most standard professional headsets for normal commercial uses.

Loudspeaker Use

When the station is used in loudspeaker only mode operation is push-to-talk and sidetone has no relevance.

Use with Accessory Microphone

The sidetone control is factory preset to give minimum output of the microphone through the station's own loudspeaker. Sidetone is affected somewhat by external factors such as the wiring, or connection of other stations. In the Tecpro system this is minimised, but other compatible systems are not so good.

For optional operation with an open microphone, the sidetone must be adjusted to completely cancel any sound from the microphone coming through the loudspeaker. This is most easily done by <u>gently</u> tapping the microphone whilst adjusting the screwdriver preset until the sound disappears from the loudspeaker. There will be a 'null' position between the adjustment stops.

6 OVERRIDE CONTROL FUNCTION

LS300 series stations are equipped with a receive circuit for an ultrasonic (25kHz) control tone generated elsewhere on the system. The generator (OG904) is usually fitted in the main or master station so that when in 'talk' mode it can remotely control these types of loudspeaker.

There are 4 modes of remote control.

Mode (0)

No override function

Mode (1)

Set to preset override volume level. This adjustment is a screwdriver preset through the front panel. This can be used to remotely restore the volume when the main volume control is turned down. Alternatively when turned fully down this can be used to remotely turn the speaker off.

Mode (2)

Set from OFF to LISTEN and set to preset level - overrides local off switch in addition to mode (1).

Mode (3)

Set from OFF to TALK to LISTEN and set to preset level - overrides local off switch and prevents local talk ie master 'all call' or 'crash call' in addition to mode (1).

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Mode (4)
Set from TALK to LISTEN and set to preset level -
prevents local talk in addition to mode (1).
The mode is set with links on the printed circuit,
locations are marked on the rear PCB. The modes
are selected as follows.

Mode	Link 1	Link 2	Link 3
0	Cut	Cut	Cut
1	Make	Cut	Cut
2	Make	Make	Cut
3	Make	Make	Make
4	Make	Cut	Make

7 CLEARCOM COMPATIBILITY

Tecpro stations are completely compatible with
Clearcom stations. Any Tecpro stations added to
Clearcom will function as their Clearcom
equivalents. However, Clearcom stations have a
lower bridging impedance and will degrade a
Tecpro system slightly due to a reduction in side-
tone stability incurred when a Clearcom outstation
is used in a Tecpro communications system.
Additionally, override tone may be reduced in
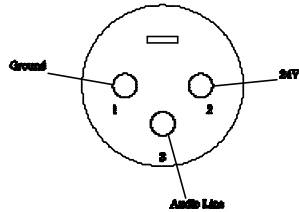effectiveness by Clearcom stations.
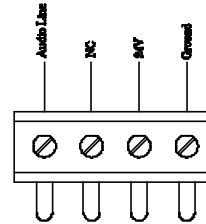
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Diagram 1
Circuit wiring LS31/T and LS31

Diagram 2
Circuit wiring LS31/P showing
connecting plug viewed from
screw terminal side.

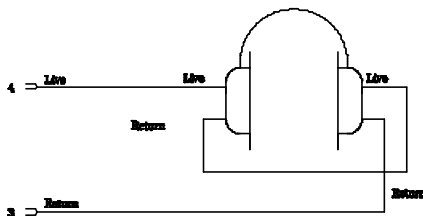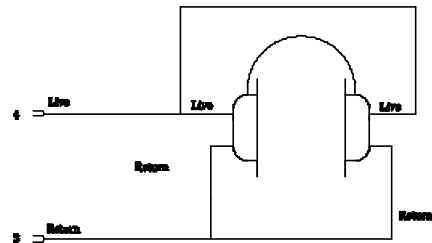| 1 | ⊘ | Circuit 1 |
2	⊘	Circuit 2
3	⊘	Circuit 3
4	⊘	Circuit 4
5	⊘	N.C.
6	⊘	N.C.
7	⊘	N.C.
8	⊘	N.C.
9	⊘	N.C.
10	⊘	N.C.
11	⊘	24V
12	⊘	Ground

Diagram 3
Circuit wiring LS312/P
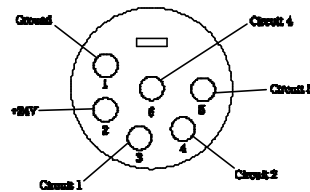
Diagram 4
Circuit wiring LS312/T and LS312

XLR 4-Pin Connector for Headsets of
Impedance less than 100Ω (Per Ear)

XLR 4-Pin Connector for Headsets of
Impedance more than 100Ω (Per Ear)

Diagram 5