

GAI-TRONICS

A division of Hubbell Ltd.

Dual Channel Intercom Controller for 'Good Channel Engineering'



OPERATION & TECHNICAL MANUAL

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Dual Channel Intercom Controller for Good Channel Engineering

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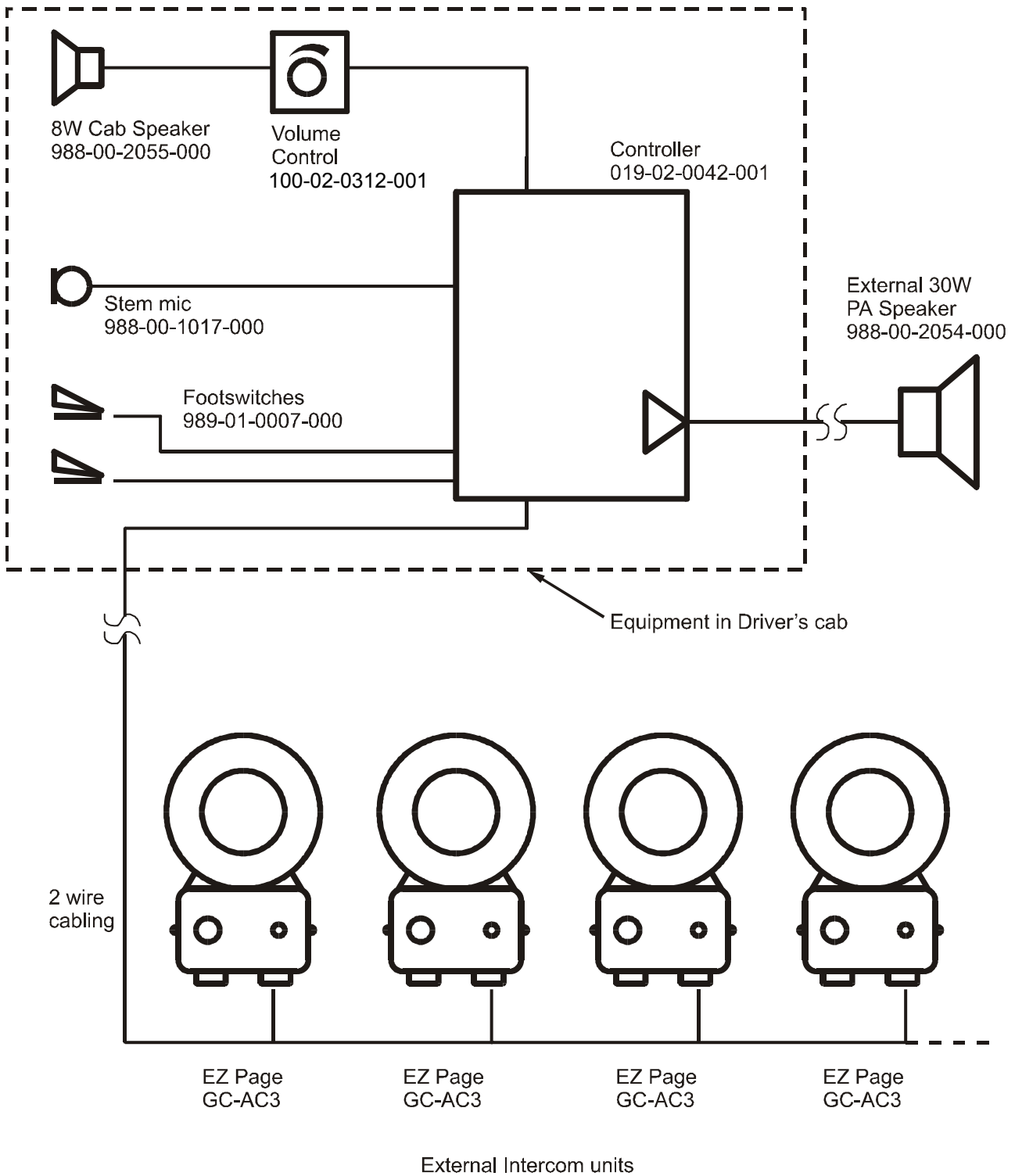
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1. Essential Safety Information

IMPORTANT

- ♦ This equipment contains hazardous voltages.
- ♦ Mains supply must be isolated elsewhere before opening the case.
- ♦ Installation and maintenance must only be carried out by qualified personnel.
- ♦ The equipment must be earthed.
- ♦ Cabling and connections must be in accordance with BS7671 (16th edition IEE regulations) and comply with BSEN60950.
- ♦ Mains connection must be made via a double-pole, max. 6A fused, isolating switch.
- ♦ Only replace the internal mains fuse with the correct type: 20x5mm HRC 3.15A Anti-Surge.
- ♦ It is essential that the integrity of the earth bonding connection between the rear enclosure and the front panel is maintained.
- ♦ Do not install externally or in areas exposed to rain or water. Do not subject the front panel to direct water spray. Do not clean using high pressure hoses.
- ♦ The unit is heavy (~9kg). Adequate precautions must be taken when lifting and installing to prevent injury. Fixings must be selected to ensure that the unit remains firmly in place.

2. Product Description



GAI-TRONICS

The Dual Channel Intercom controller is a custom version based on GAI-Tronics' 1058 series of intercoms. The unit is configured for use on RTG and QC cranes and is intended to be the central part of a system connected to a number of EZ Page intercom stations, providing voice communication across the crane. The controller features:

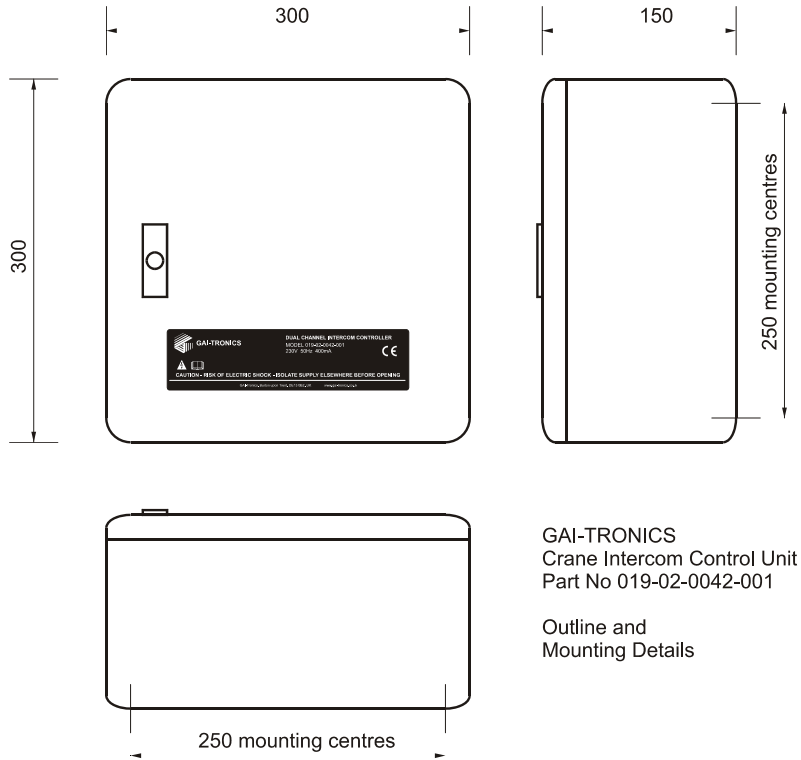
- All inputs, outputs and controls are remote
- Single microphone input
- 2 output channels –
 - Channel 1 is connected to an integral 30W power amplifier for connection to an external loudspeaker.
 - Channel 2 is a balanced audio line intended to be connected to a string of EZ Page intercom stations. A single twisted pair handles 2-way communication.
- 2 footswitch inputs – push-to-talk on channel 1 and channel 2
- Integral 6W receive amplifier for connection to cab speaker.
- Rugged IP54 enclosure intended for mounting remotely from the driver.
- 230Vac operation

In addition, the controller is normally supplied with:

- 2 rugged footswitches
- Gooseneck microphone
- Surface mounted cab speaker
- In line volume control for cab speaker
- External horn speaker

3. Installation

3.1. Controller



All possible measures must be taken to ensure water, fluid or dust does not contaminate the internal components of the controller whilst unpacking, preparing and installing the unit in inclement weather conditions or by negligence.

Failure to do so may invalidate your warranty.

The controller unit should be secured to a vertical flat surface using the 4 x 6mm mounting holes provided. Mounting holes are accessible from inside the controller case.

Mark the wall with hole centres, if necessary offer the rear enclosure up to the wall to check alignment. Do not use the enclosure as a template for drilling.

Drill holes in the wall on the marked positions. Select appropriate screws, wall plugs etc., for the type of wall, bearing in mind that the weight of the complete unit is around 9kg.

WARNING: Your warranty will be invalidated if :-

1. Any fixing hole made in the rear enclosure is left unused.
2. Any additional holes are drilled into the enclosure.

Take care to maintain the integrity of the glands when fitting cables, to preserve the seal.

3.2. Microphone

The cab microphone should be fixed to a suitable flat surface using the 3 mounting holes in the base provided. Cabling should be via twin core screened cable to the terminals shown on the wiring diagram, maximum distance 3m.

3.3. Footswitch

Two footswitches are provided. The normally open contacts should be connected to the terminals shown on the wiring diagram, maximum distance 3m.

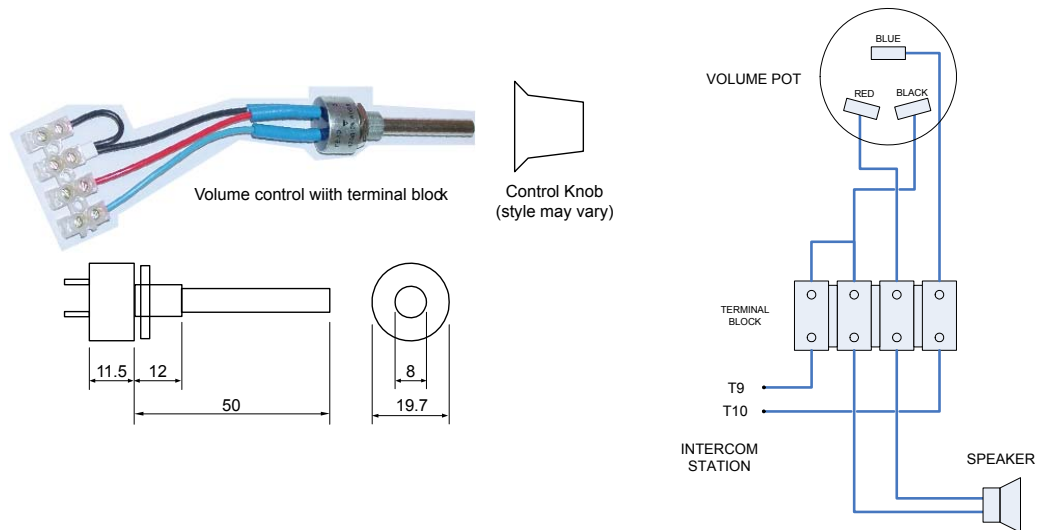
3.4. Cab speaker

The cab speaker should be mounted in a convenient position in the cab and connected through the in-line volume control as shown on the wiring diagram.

Note that only low impedance speakers (8Ω) are suitable for connection to the in-line volume control and controller.

Cabling to the cab speaker and in line volume control should be a twisted pair of min 0.5mm² cable, maximum distance 5m.

3.5. In-line volume control 100-02-0312-001



The in-line volume control should be mounted through a panel and connected between the cabin intercom station and the cab speaker as shown above and on the wiring diagram. A control knob is provided.

Note that only low impedance speakers (8Ω) are suitable for connection to the in-line volume control and intercom station.

Cabling to the cab speaker and in-line volume control should be a twisted pair of min 0.5mm² cable, the total distance between speaker, volume control and intercom station should be no longer than the stated 5m.

Note: adjusting this control to its minimum will mute the audio from the cabin speaker. Take care not to adjust this control to zero.

3.6. External loudspeaker

The external loudspeaker should be fixed securely in place at the required location and connected to the terminals as indicated on the wiring diagram.

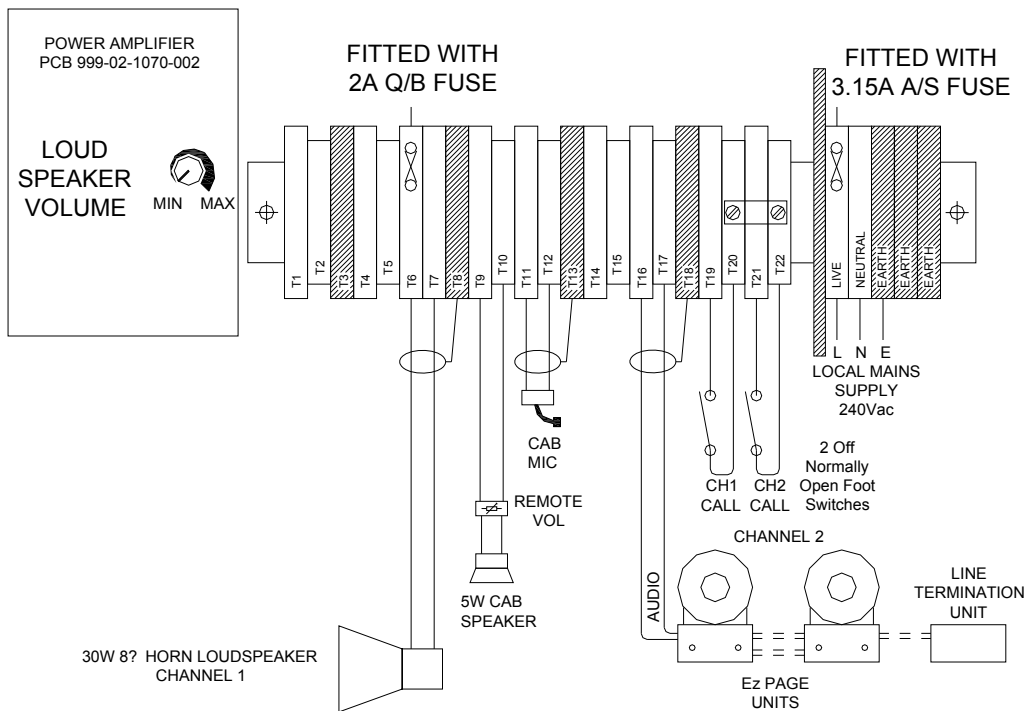
Note that only low impedance speakers (8Ω) are suitable for connection to the controller.

Speaker volume is adjusted by a potentiometer mounted inside the controller shown on the wiring diagram.

Cabling to the external loudspeaker should be a twisted pair of min 1.5mm^2 cable, and the cable length should not exceed 250m.

3.7. Wiring

The connections to the controller are shown below:



The controller unit must be earthed to a mains safety earth.

Mains wiring should be rated 6A min. Mains must be connected via a dual pole, fused, isolating switch or device, with a maximum rating of 6A.

Seven IP66 glands are provided in the removable gland plate on the bottom of the controller – one for each cable shown.

Audio cabling to the EZ Page units should be twin core (twisted pair) and screen. Refer to separate manual (part number 502-20-0097-001) for installation and operating instructions for EZ Page.

Mains and signal wiring should be kept segregated observing the requirements of EN60950.

4. Operation

The controller unit is normally in listen mode, ie with no footswitches pressed any speech from any connected EZ Page stations will be broadcast over the cab speaker.

The volume of the cab speaker is adjusted by the in-line volume control.

To broadcast a message to the external high power loudspeaker, press the channel 1 footswitch and speak into the microphone. Speaker volume is adjusted by the potentiometer mounted inside the controller shown on the wiring diagram.

To broadcast a message to the EZ Page string, press the channel 2 footswitch and speak into the microphone.

Pressing both footswitches allows broadcast to both channels simultaneously.

To listen to a reply from an EZ Page, release both footswitches.

5. Specifications

Weight (excluding cables) 8.6kg

Dimensions300W x 300H x 150D mm

Case MaterialMild steel

Supply voltage85-264V ac, 47-63Hz

Power Input80W max

Audio line impedance600Ω, balanced

Input sensitivity for rated output 7V p-p

Frequency Response 250Hz - 5kHz

Audio output power.....30W peak

Internal mains fuse..... 20x5mm ceramic HRC type, 3.15A Anti Surge

Speaker output fuse 20x5mm glass quick blow, 2A

Temperature range (operating)0°C - +40°C

Temperature range (storage) -10°C - +60°C

Recommended maximum no. of EZ Page units (Ch2)..... 20

Recommended max. cable run (Ch2) 3.2km

6. Spare parts

Item	GAI-Tronics part number
Main controller	019-02-0042-001
In line volume control	100-02-0312-001
Cab speaker	988-00-2055-000
Stem mic (450mm)	988-00-1017-000
Stem mic (150mm)	988-00-1017-001
Footswitch	989-01-0007-000
External loudspeaker	988-00-2054-000