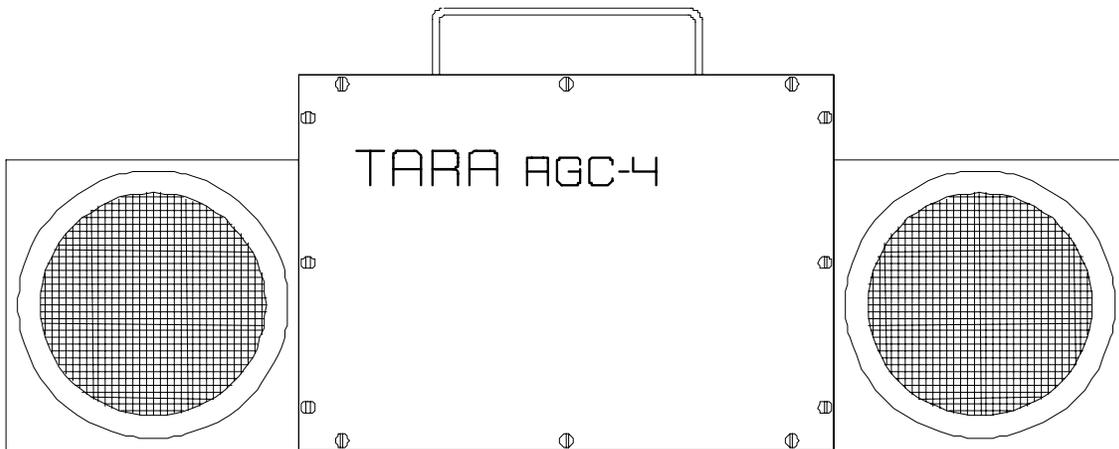


TARA CONTROLS

AGC-4

UCI Random Start USER'S GUIDE



**Now with Warning Flashes for the
Hearing Impaired**

TARA CONTROLS by Cartessa Corporation

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1. Component Layout.

When used with the optional speaker modules, the AGC-4 gate controller is an all-in-one unit, complete with speakers and microphone. With a microprocessor controlling all functions, the unit is accurate, flexible and user friendly. The controller can be factory wired for either 115 VAC or 230 VAC. All controls and connectors can be found on the rear panel of the controller or on the hand control (see the CONTROL LAYOUT drawing at the end of this User's Guide):

- 1, 17. Connectors for one or two external speakers. The connector is a standard 1/4 inch jack. The connectors can be used with the TARA Speaker Module or any other 4 or 8 ohm speaker with at least a 15W power rating.
2. A main power switch. This switch controls power to the controller including the air gate output.
- 3,15 Two threaded sockets (found on both sides). The sockets are used for the optional TARA Speaker Module. Use 8-32 screws to mount the speaker module or modules.
4. A 120 VAC, two lamp (red and green) light stand outlet. Wire the green light to the narrow (gold) pin, the red light to the wide (silver) pin and the neutral wire to the "ground" pin of the outlet.
5. A six-foot long power cable. The cable comes with a U.S. standard power plug.
6. A 120 VAC gate (air cylinder) outlet. The standard configuration provides the same signal at both outlets (GATE 1 and GATE 2) and will provide 120 VAC for the gate UP position and 0 VAC for the gate DOWN position. However, TARA can provide custom versions that will control GATE 1 and GATE 2 separately. Typically, this is used with independent up and down cylinders.
7. A fuse protecting the 120 VAC gate output, as well as the 120 VAC light stand output. The standard value is 2 A slow blow. It may be necessary to adjust this value based on the load. The fuse will protect the controller when a short circuit is present on either output.
8. A cable retainer. Use this for the power cable and the hand control cable.
9. A volume control. Use this control to set the desired audio volume.
10. One PA amplifier output. This output can be used with an external amplifier. The output level is controlled by the volume control.
11. A 5 pin accessories connector. In the standard configuration, this connector will interface with the TARA timing system.
12. A 3 pin AMBit connector. This connector is used with the AMBit timing system.
13. A 5-pin connector for the removable hand control cable.
- 14, 16. Two 6 pin connectors for one or two 12 VDC TARA light stands. In addition to providing lamp signals, the connectors provide a speaker signal to each light stand. However, if the corresponding (A or B) speaker connector (1,17) is used, the speaker output connected to that light stand (A or B) is disabled.

18. A microphone activating switch. Use this switch to turn on the hand control microphone.
19. A gate reset switch. Use this switch to raise the air gate.
20. A hand control microphone. The microphone allows the AGC-4 to perform as a PA system.
21. A start switch. This switch will initiate the starting cadence.

2. Operation.

2.1. Initial Settings.

The AGC-4 controller has a few internal adjustments. To gain access to these controls, **unplug the power cable**, and then carefully remove the rear cover. If changes to the factory settings are necessary, a three position Dipswitch can be found in the middle of the printed circuit board (the board is mounted to the cover). On the three-position DIP switch, SW1 turns on or off the UCI warning beeps. SW2 is used to turn on or off the gate warning lights for the hearing impaired riders. Switch SW3 controls the action of the air gate and should normally be in the OFF position. If a dual air cylinder gate is used, it may be necessary to change this switch (consult the factory if you are using such a set up).

The transformer is factory wired for either 115 VAC or 230 VAC. **DO NOT ATTEMPT** to rewire the transformer without consulting the factory.

2.2 Field set up.

1. Position the AGC-4 where the operator has easy access and all connections can be made securely and safely. If possible, position the controller away from direct sunlight, particularly in hot weather.
2. Connect the AGC-4 power cable to a 115 or 230 VAC outlet (depending on the power line voltage of the AGC-4). **CAUTION:** The outlet must conform to local electric codes and regulations. The power cable is using a standard United States plug. An adapter may be necessary in some locations. In the power cord the black wire is line voltage (hot), the white wire is line voltage common (neutral, typically at the same potential as safety ground but carrying current) and the green wire is safety ground (connected to the metal enclosure of the AGC-4). The power switch should be in the off position.
3. Connect and position one or two light stands using either the 12 VDC light stand outlets or the 120 VAC light stand outlet (depending on the type of light stand used). If the light stands are equipped with speakers, make sure that there are no connections made to the speaker connectors (if a connection is made to the SPEAKER-A connector, the speaker output of the 12 V LIGHT-STAND-A is disabled and the same is true for the "B" outputs). If the TARA speaker modules (one or two) are used with the AGC-4, make sure that the speaker enclosure(s) has been properly mounted either to the back of the AGC-4 or the top of the light stand using 8-32 screws. After mounting the

speaker enclosure(s) to the AGC-4, connect the enclosure cable to the appropriate speaker output jack (1, 17) on the rear of the AGC-4. If any other make of speaker(s) is used, position the speaker(s) and connect to one (or both) of the rear panel speaker jacks (1, 17).

4. Connect the air gate to one of the Gate outlets (or both if a special dual air cylinder setup is used). The dual AGC-4 Gate outlet is a standard United States 115 VAC power outlet. An adapter may be necessary in some locations. The round pin is safety ground (connected to the AGC-4 enclosure), the slightly wider flat blade is neutral (white wire and silver screws) and the slightly less wide flat blade is hot (black wire and gold screws). **CAUTION:** The wiring between the AGC-4 and the air gate must conform to local electric codes and regulations.
5. If the hand control was disconnected, connect the hand control cable to the connector (13) on the rear panel with the units power off. Ensure that the twist lock is in the locked position.
6. If a timer is used, connect the timer to the appropriate connector (11 or 12) on the rear panel.
7. If used, connect an external amplifier to the PA Amp jack. For more information regarding external audio components, see section 2.4.

2.3 Operating the AGC-4.

1. Turn the power switch on. It is normal for the lights to flash on initial power up.
2. If the gate is down, raise the gate by using the air gate reset switch (19). If using an up/down gate, it is sufficient to hold the switch for about one second. When an up only gate is used, maintain the switch until the gate is fully raised. (Also see section 2.1). **CAUTION:** Ensure that the gate is clear of riders before raising.
3. If necessary, use the microphone and microphone activation switch (18 and 20) to direct the riders to the gate.
4. Use the start switch (21) to activate the voice commands. Set the volume control for the best quality voice.
5. Use the start switch to start the riders. The first voice command is “**OK riders, random start**” followed by a delay. If the start button (21) is depressed during the delay, the cadence is paused until the button is released. This will allow the riders to stage before the final two phrases are played. The second voice command is “**Riders ready**” followed by a short pause. The third voice command is “**Watch the gate**”. After a random pause the horn will beep and the light stand sequence of red-yellow-yellow-green is shown. When the green light is turned on the gate will drop. Before the start of the Light/horn sequence it is possible to reset the controller by using the start button a second time.
6. After the riders have departed, raise the gate for the next race.
7. Repeat steps 2 through 6.

2.4 Using external audio components.

Typically, the AGC-4 will be used with one or two TARA speaker modules, either mounted to the enclosure or the light stand. However, some users may wish to use third party speakers. These speakers are connected to the AGC-4 using ¼-inch plugs connected to the rear panel speaker jacks (1, 17). When the plug is inserted, the corresponding light stand speaker is turned off.

Any external speaker should have a minimum impedance rating of 4 ohms and should be rated at a minimum of 15W of power.

When selecting an external speaker, it is important to find a high sensitivity model, preferably with a 4-ohm impedance rating.

To obtain more power than what is available from the internal amplifiers, it is possible to connect an external amplifier to the PA Amp jack (10). When an external amplifier is used, the volume control (9) will control the audio level at the jack. Connecting the amplifier will not turn off the speaker jacks. To turn off the speakers, disconnect the speaker cables either at the AGC-4 or the light stand. The maximum level at the PA Amp jack is approximately 1 Vrms. The minimum load should not be less than 10 kohms.

The AGC-4 controller has a built-in microphone for use by the starter. **It is not possible to connect an external microphone to the controller.**

3. Troubleshooting.

There are no user serviceable parts inside the AGC-4. Please consult the factory if you suspect internal problems.

Please note that replacement hand controls and AGC-4 printed circuit boards may be purchased separately from TARA controls.

The following list highlights some of the possible problems along with the appropriate corrective action:

1. *Loss of power in Lightstand output:* The four lamp (12 V) light stand output is protected by auto-reset fuses. If there is an overload on the output, the output will be turned off. Remove the light stand and check for short circuits. The output will be turned on again after the fuse resets (typically in a few minutes). The two lamp (120 V) light stand output is protected by a slow blow fuse (7). Check the fuse and if necessary replace with a 2A slow blow fuse.
2. *Malfunctioning up/down air gate:* If the air gate is not functioning properly, it is helpful to know if the problem is in the air gate or in the AGC-4. To diagnose the problem, connect a load that can easily be monitored to the Gate outlet (lamp or desk light etc.). Operate the gate reset switch and note that the load

is turned on (please note that there is a short delay before the switch is activated). Use the start switch and observe that the load is turned off on the green light. Ensure proper setting of SW3 (see section 2.1). If there is no output, check the Gate fuse (7). The fuse must be replaced with a 2A slow blow type.

3. *Poor sound quality on the voice:* If the voice is distorted, the volume control may be set too high. Turn the volume control counter-clockwise.
4. *Feedback when using the microphone:* If there is feedback when using the microphone, try to move away from the speakers. Use the microphone switch (18) only when talking.
5. *Voice commands not as expected:* If the voice commands appear to be non-standard or the pauses between commands are too long or short, the internal mode switches (see section 2.1) may have been changed.

Specifications.

Power: Factory wired for 115 VAC or 230 VAC $\pm 10\%$.

External speakers' output: 4 ohms minimum, 15W minimum.

External PA amplifier output: 1 Vrms maximum, 10-kohm minimum

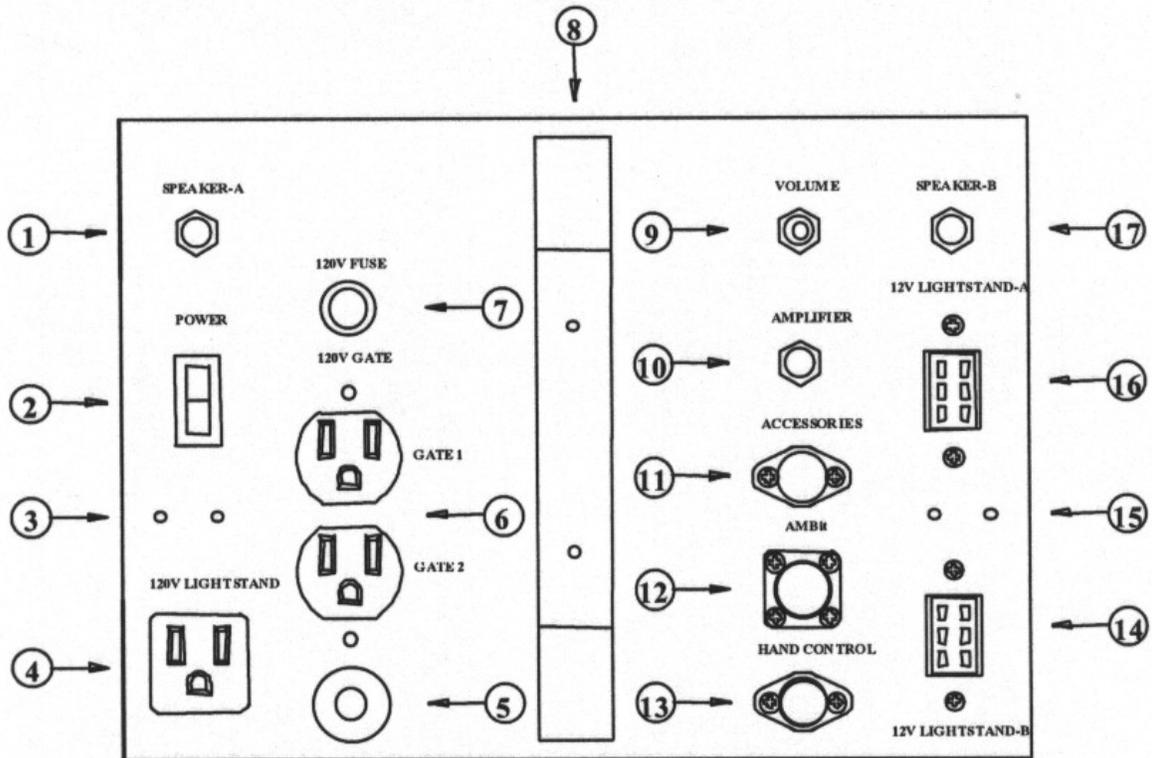
Gate output: 115 VAC or 230 VAC (same as power input).

Lightstand output: 12 VDC, 1A/lamp, 8 lamps maximum (two 4 lamp light stands). 120 VAC, 250W/lamp, one two-lamp light stand maximum.

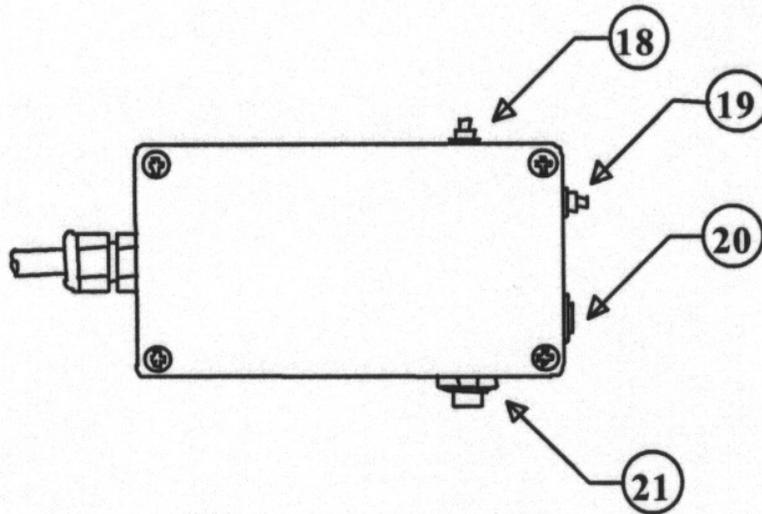
Serial Number:



This AGC-4 belongs to:



AGC-4 REAR PANEL



HAND CONTROL

Old TARA AGC-3/4 Switch Settings



Switch on Circuit Board

FACTORY SWITCH SETTINGS		
DIP-SWITCHES		LEAGUE
SW1	SW2	
OFF	OFF	NBL
ON	OFF	ABA
OFF	ON	UCI RANDOM START OFFICIAL
ON	ON	UCI RANDOM START Without Extra Beeps

External UCI Switch overrides ABA, NBL and UCI without Extra Beeps and forces the unit to UCI Official Mode.

This is for versions: AGC4V7B and AGC3CV3.

You must cycle unit power to change Leagues (Off then On) after changing the switches.

New TARA AGC-3/4 Switch Settings

For versions: AGC4V10A and AGC3CV6 and newer.



Switch on Circuit Board

You must cycle unit power to change Leagues (Off then On) after changing the switches.

FACTORY SWITCH SETTINGS	
DIP-SWITCHES	FUNCTION
SW1	
OFF	UCI RANDOM START OFFICIAL
ON	UCI RANDOM START WITHOUT EXTRA BEEPS
SW2	
OFF	NO FLASHING LIGHTS ON GATE WARNING BEEPS
ON	FLASHING LIGHTS ON GATE WARNING BEEPS
SW3	
OFF	STANDARD AIR CYLINDER
ON	MOMENTARY PULSE DUAL ACTION CYLINDERS *

External UCI Switch if available overrides UCI without Extra Beeps and forces the unit to UCI Official Mode.

* Note: The button needs to be held in for the momentary pulse through all five warning beeps.