

**Changzhou Xionghua Tongtai Automation Equipment Co., Ltd**



User's Guide  
Musical Fountain Controller  
**XHYK-10**

## Feature

- I Power supply: AC220V 50Hz/60Hz
- I Permitted Voltage Range :AC220V  $\pm 10\%$
- I control not only converters, but also solid state relays
- I turns audio signals from CD, VCD, MP3 into 0-10V D/C signal (3 outputs)
- I the function of audio starting output

Music fountain full use the controller and the rhythm of the music art of the perfect combination of water features for your fountain to add dynamic art color. It will come from the compact disc CD, VCD, DVD, MP3 music playback devices such as the signal frequency converter automatically converted to the required control signals. Output signal and the size of the input music signal into a linear relationship, so that the spray fountain the size of the high signal changes with the music, music, spray, lantern integration, performance of a symphonic poem of water.

In addition to the controller over the analog audio signal into a frequency signal control can also be implemented at some point the audio signal switch control output, in addition to start with the audio signal output. So the controller can not only control the frequency, but also to control solid state relays, solid-state sound control to achieve lower overall cost control system.

The controller transfers audio signals to analog signals. Moreover, it can digitally control output at a designated frequency of audio signal. It also can initiate signal output by audio. Therefore, this controller is able to control not only converters, but also solid state relays.

## Display Board



Item	Name	Descriptions
(1)	Audio Zoom-In Knob	Adjust audio output voltage
(2)	Start Voltage Knob	Adjust output voltage without audio input
(3)	SSR driver voltage setting knob	Comparing SSR driver setting voltage with output voltage, when output is higher, there is output voltage at output terminal; when output is smaller, output voltage will be off.
(4)	Audio input select	OFF: audio input signal is cut off; ON: audio input signal is on
(5)	Start voltage input select	OFF: start voltage is off (start voltage is 0V); ON: start voltage is on
(6)	Frequency spectrum display switch	Switch between SSR settled driver frequency spectrum and actual output frequency spectrum. Left is for settled output frequency spectrum and right for actual output frequency spectrum.
(7)	Frequency spectrum display	Display output frequency spectrum intensity and SSR settled frequency spectrum intensity
(8)	Power supply LED	LED will be on when power is on
(9)	Audio start LED	LED is on when there is audio signal input to display audio signal is on
(10)	SSR output LED	LED is on when there is output

Chart 2-1

## Functions and Action Principles

- 1-Audio zoom-in knob: Adjust audio output voltage per audio signal unit. If the output voltage varies within a small range, you can enlarge the magnification; If the output voltage is over 10V even when audio signal input is very small and start voltage is not high, reduce the magnification.
- 2-Start voltage knob: Start voltage is the output voltage when there is no audio input. Adjust the start voltage can change the output frequency of converter when there is no audio signal. When there is audio signal input, the output frequency of converter is an overlap based on start voltage. When there is no start voltage and audio signal starts to input, converter frequency gets up while the water pump has a delay. Therefore, the audio control effect will not be obvious. If there start voltage is not zero, water pump works without audio signal input. The water output will increase along with audio signal input. The audio control effect will be obvious.
- 3-SSR driver settled voltage knob: Turn switch (6) to SSR display, (7) will display frequency spectrum according to SSR driver settled voltage. When output voltage is larger than SSR driver settled voltage, SSR output terminal outputs; while smaller, SSR output will stop. Using SSR to realize musical control, when audio signal is small, SSR driver settled voltage should be small and vice versa.
- 4-Audio input select: OFF: audio input signal is cut off; ON: audio input signal is on
- 5-Start voltage select: OFF: start voltage is off (start voltage is 0V); ON: start voltage is at the value the knob shows. When (4) is OFF and (6) is at display status, (7) displays frequency spectrum according to start voltage.
- 6-Rum display switch: displays SSR settled output and real-time output frequency spectrum.
- 7-Frequency spectrum display: display real-time music rhythm and volume, and start volume.  
When switch to SSR display, it displays current SSR driver settled voltage.
- 8-Power supply LED: display if controller is power-on and in standby status
- 9-Audio start LED: display if there is audio signal input
- 10-SSR output LED: display if there is output at SSR output terminal

## Terminals

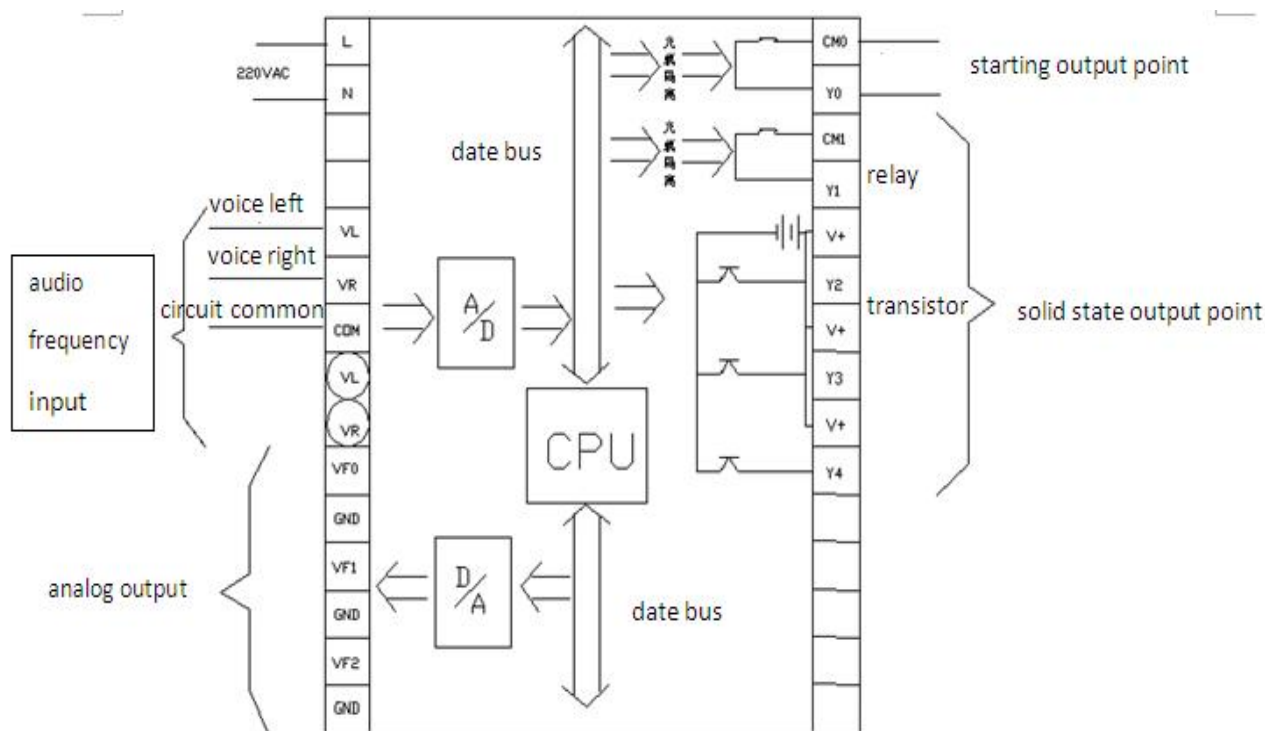


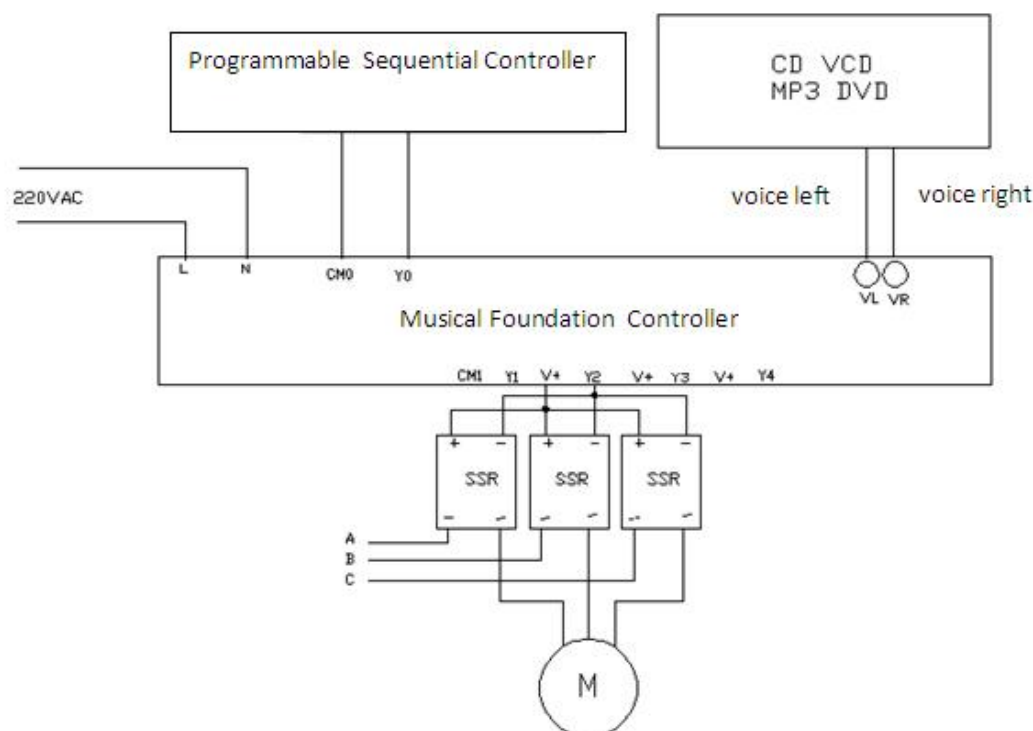
Chart 3-1 terminal diagram

Terminal	Name	Description
L N	Power Supply	220V AC input
VL	Left channel input	VL, COM left channel input
VR	Right channel input	VL, COM right channel input
COM	Shared terminal	Audio signal shared terminal
VF0 VF1 VF2	Analog Signal output	VF0/VF1/VF2, and GND connect converter to control frequency of converter
GND	Shared analog signal output terminal	
CM0. Y0	Audio start output terminal	CM0.Y0 connected when audio signals coming in
CM1,Y1		When output voltage is larger than SSR driver voltage setting value, CM1.Y1 connected.
V+	Transistor output shared terminal	Connect SSR control terminal +
Y2,Y3,Y4		Connect SSR control terminal- to control the SSR

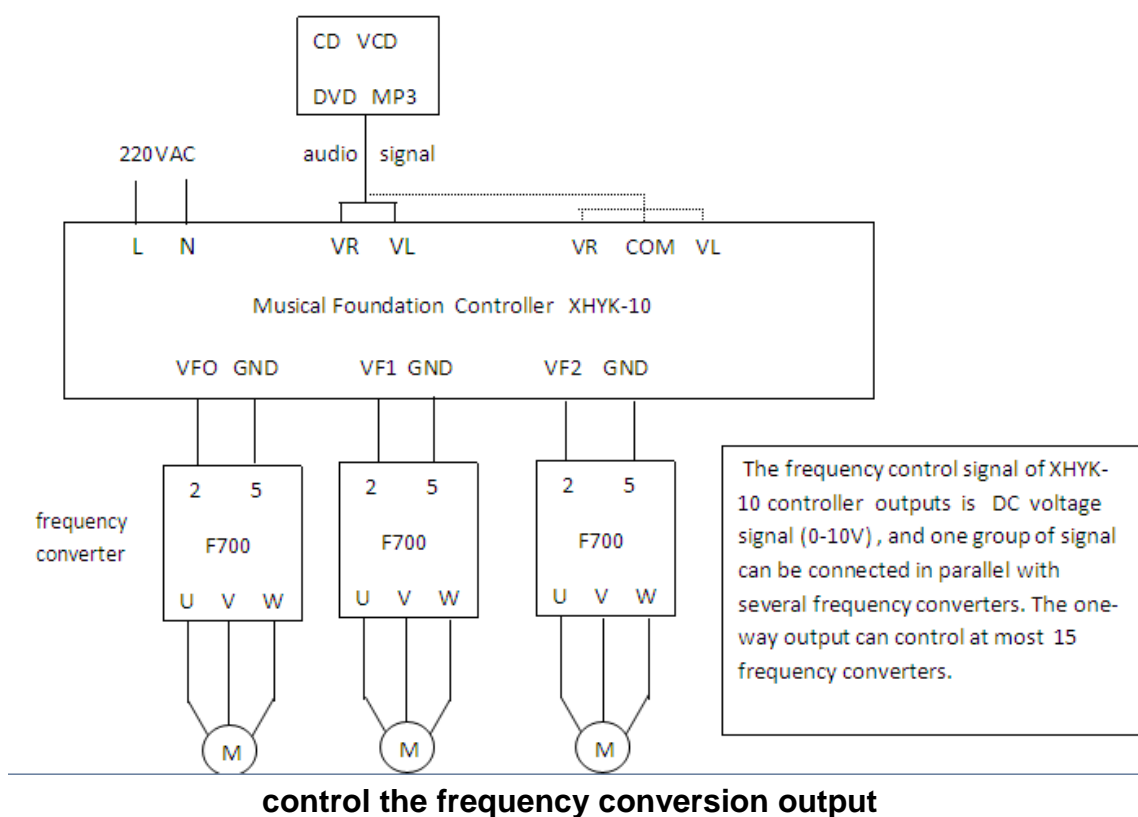
## Description

- 1.The controller turns audio signals from CD, VCD, MP3 into 0-10V D/C signal the inverter requires. The D/C signals have a linear relationship with audio signals. (3 outputs)
- 2.The user can set the starting voltage for status when there is no audio input. When audio signals come in, output voltage is a superposition of starting voltage and voltage corresponding to the audio signals.
- 3.The controller has the function of audio starting output. When there is audio input to YO and CMO terminals, it will start (dry contact).
- 4.The controller also has the function of solid state relays. The user can regulate the voltage to control output. Therefore, it can realize audio control without the inverter. (It has solid state relay output and transistor output. The power for the transistor is supplied.)

## Connection diagram.



**control the solid state output points**



#### Notes:

1. CD VCD DVD, and MP3 left and right channel signals directly connect controller VL and VR. When output terminal is not round hole, it can connect VL, VR, and COM.
2. VF0, VF1, VF2, and GND connect converter analogue voltage input terminal (see picture 5-2)
3. Y2, Y3, and Y4 connects SSR (-), V+, and (+), respectively (see picture 5-1).
4. Y0 and CM0 can start PLC to realize audio start effect.

#### Technical Data

Power input	
Voltage	AC220V
Permitted Voltage Range	AC220V±10%
Frequency	50Hz/60Hz
Momentary power failure duration allowed	Momentary power failure duration within 20 ms allowed. Machine will continue to work.
Power fuse	250V 3A
Signal Input	Audio Signal

Chart 6-1 Power supply and Input

Item		Relay Output	Transistor Output	Analog Output
Voltage		AC250V below DC30V	DC12V	0-10VDC
Circuit Insulation		Mechanical Insulation	Optocoupler Insulation	Optocoupler Insulation
max load	Resistance load	2A/point	500mA/point	2K
	Inductive load	80VA	—	—
	Light load	100W	0.9W/DC 12V	—
Switch leakage current		—	0.1mA/DC12V	—

Chart 6-2 output speci fi cation

## Hole Size

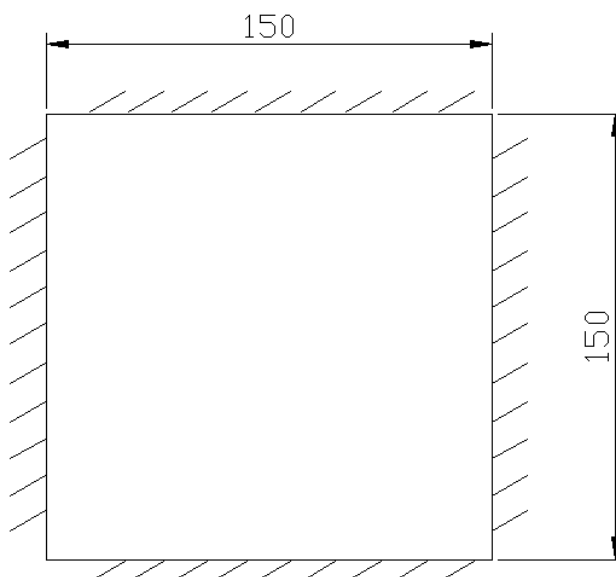


Chart 7-1

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