Road traffic signal controller

XHJ-CW-GA-GSC100

Specification

Statement

The products described in this manual are authorized products of GRG Intelligent Technology Solution Co.,Ltd. In order to ensure the smooth and safe use of the equipment, please be sure to read the contents of this manual carefully.

We have the right to make partial improvements to this product based on new technologies or component updates without prior notice. Please obtain the latest product information from Guangzhou GD Yuntong Intelligent Technology Co., Ltd.

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Contents

1. Overview

The road traffic signal controller XHJ-CW-GA-GSC100 is a centralized coordinated road traffic signal controller independently developed by GRG Intelligent Technology Solution Co.,Ltd. It is mainly used for vehicle sensing, transmission and processing of vehicle information, controlling traffic light signals at intersections, and cooperating with the traffic signal control system platform to achieve intelligent control of urban traffic and improve travel efficiency.

Scope of application: Applicable to urban roads, highway intersections, and county and township roads with traffic signal control requirements.

2. Function and Features

- It is powerful in functionality, featuring control functions such as flashing, extinguishing, full red, multi-period fixed cycle, manual panel/system platform phase selection, cable-free coordination, single-point induction, single-point optimization, pedestrian request, bus priority, emergency event, and system optimization.
- Support maximum of 8 light control boards, each light control board is divided into 4 groups of channels, each group of channels consists of red light, yellow light and green light, with a total of 96 terminals; supports 32-way leakage detection; supports 32-way switch detector input; supports 8-way switch output.
- It supports the use of IO, RS422/485 and RJ45 interfaces to access various types of detectors, including coil detectors, geomagnetic detectors, video detectors, radar detectors and radar video all-in-ones as vehicle detectors, as well as switch-type pedestrian buttons and communication-type pedestrian buttons.
- Comply with national standards"GB25280-2016 Road Traffic Signal Controller", "GB20999-2017 Data Communication Protocol between Traffic Signal Controller and Host Computer", "GA920-2010 Communication Protocol between Road Traffic Signal Controller and Vehicle Detector", "508-2014 Road Traffic Signal Countdown Display" requirements.
- Supports access to self-learning, protocol and pulse countdown signs, and supports variable lane sign control and information screen publishing functions.
- It has the function of detecting signal light faults such as green conflict, red and green lights on at the same time, and lights not on, and can automatically downgrade the processing when a fault occurs.
- It has chassis monitoring function, monitoring environmental temperature and humidity, smoke, water immersion detection, and front and rear side door switch monitoring.
- Emergency power supply access port, independent hardware yellow lightning circuit, backup CPU takeover function, and surge and lightning protection design, ensuring the safe use of the equipment.
- The modular design of the standard 19-inch cage is easy to maintain and expandable, making it convenient for customers to add new functional modules according to their customized

needs.

- The 12 inch human-machine interactive touch screen facilitates timing operation and displays the operating status of the traffic lights in real time.
- Support wired and wireless(4G/WIFI)communication,GPS positioning and automatic time adjustment.
- Outdoor use: rainproof and dustproof, protection level IP65.
- Supports remote upgrade, cabinet management, permission management and other functions.

3. Technical parameters

Items	Technical Parameters
Name Model	Road traffic signal controller XHJ-CW-GA-GSC100
Light control output	Standard 4 Light control board, each board 4 Group lights (red, yellow and blue lights in each group), total 48 Terminals. Maximum support 8 Light control board, each board 4 Group lights (red, yellow and blue lights in each group), total 96 Terminals.
Input Terminals	Maximum number of supported detectors:32 Logic switch input
Output Terminals	Maximum support IO Output 8 Circuit control terminal
Leakage detection	Complete 32 Street light group leakage detection
Communication interface	RS422/ RS485/ RS232,Ethernet port, wireless communication interface(4G/WIFI)
Working power supply	AC 220V±20% 50Hz 25A
Light control current	Signal lamp terminal current:5A/220VAC
Insulation resistance	Normally ≥10MΩ
Manual panel	Button: Manual/Auto, Step, Yellow Flash, Full Red, Phase Selection (1 to 8 phase)
Human Machine Interface	12 Inch human-computer interaction touch screen
Positioning and timing adjustment	GPS Positioning and automatic time adjustment
Emergency Power Supply	Equipped with emergency power supply access port
Monitoring function	Ambient temperature and humidity, water immersion, smoke, door switch
Power Distribution Unit	Main and standby power conversion switch, lightning arrester, filter, main switch, light control switch, maintenance socket
Operating temperature	-40℃~70℃
Storage temperature	-55℃~80℃
Operating humidity	5%~95%(Non-condensing)
Protection level	IP65
Structural dimensions	Width 661 × Height 1533.5 × Depth 543.9 (Unit: mm)
Housing Material	Aluminum housing
Machine weight	net weight/Gross Weight: 80kg/85kg

Table 2. Technical Parameters

4.Composition and Appearance

4.1 Product composition

The main body of the traffic signal control machine is mainly composed of five parts: the outer casing cabinet, the mainboard chassis, the power distribution unit, the human-machine interface, and the wiring terminals. The corresponding positions are shown in the following figure:

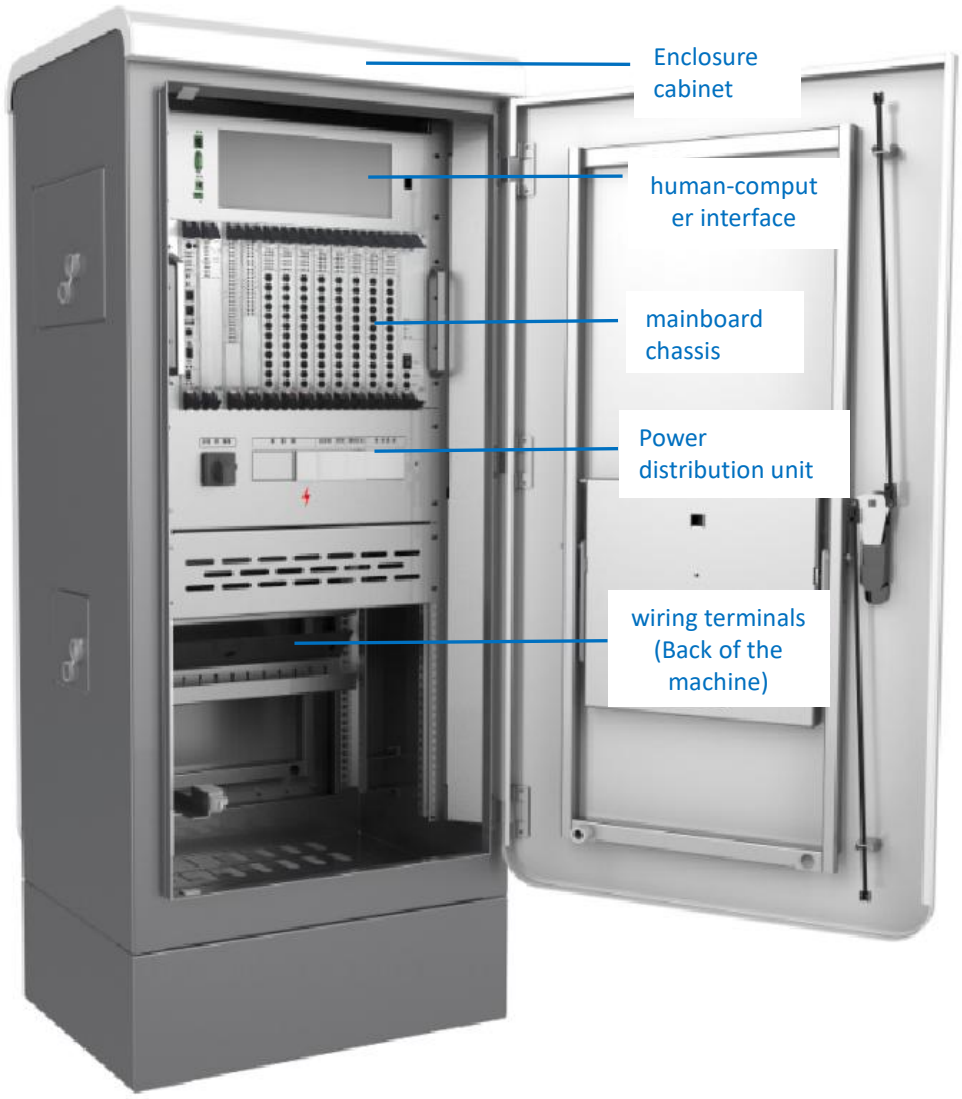

Figure 1. Schematic diagram of traffic signal controller product composition

4.2 Appearance and Dimension

Traffic signal controller dimensions: width 661 × height 1533.5 × depth 543.9 (unit: mm)

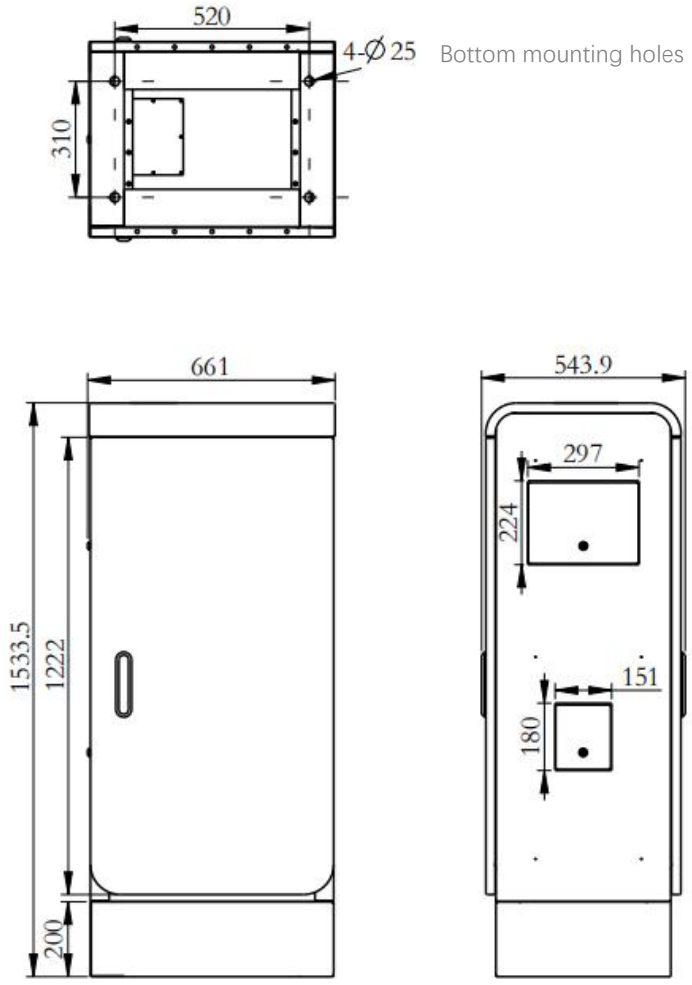

Figure 2. Dimensions of traffic signal controller

5. Appendix

5.1 Terminal block low voltage terminal block

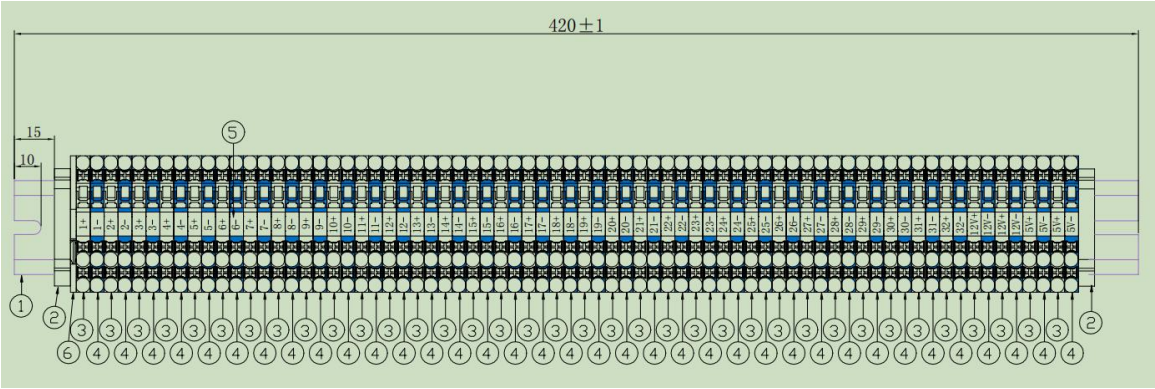

Figure 3. 32 Logic switch input interface

5.2 Terminal block high voltage terminal block

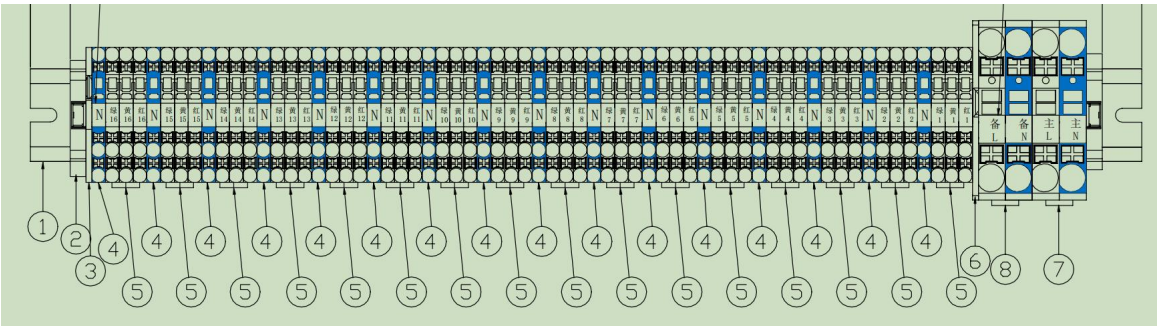

Figure 4. Light control output 48 Terminal interface