

DHI-ITRTSC-M24B-HS

Dahua Traffic Signal Controller



Series Overview

The Traffic Signal Controller is the core device in the traffic signal control system. Highly reliable, it has strong safety features, is widely compatible and offers functions such as fault diagnosis. This critical tool in modern urban traffic management also supports intelligent traffic coordination, self-adaptive flow control, data management, adjusting the timing of its signals and handling emergencies. The controller is ideal for traffic scenes as it improves traffic efficiency, optimizes traffic flow, and offers people safer and smoother traffic conditions.

Functions

Self-adaptive Flow Control

Collects traffic flow data in real time through its detection device to adapt the timing of its signals to suit the situation. When a peak period begins or congestion is detected, the controller automatically extends the green light time or adjusts the timing of its signals to alleviate traffic congestion.

Intelligent Traffic Coordination

Optimizes traffic situations by using traffic flow data and predictive modeling. It can also coordinate with adjacent traffic lights to build a green wave to reduce the number of times a vehicle has to wait, which improves traffic throughput and efficiency.

Data Management and Monitoring

Collects and records data on traffic flow, faults, and more. It also performs real-time monitoring and management through its data analysis and monitoring system, producing information that is valuable for making plans and decisions related to urban traffic.

- 1. Adopts international standard communication protocol NTCIP, providing interface that meets the standard.
- 2. Embedded control system, modular design, easy to operate and maintain.
- 3. Reliable circuit design and industrial-grade components ensure stable and reliable performance.
- 4. Real-time clock (RTC) ensures time accuracy. Supports manual time adjustment and GPS/NTP time synchronization.
- 5. All-weather outdoor casing, modular design of the entire device, flexible to adjust hardware configuration, providing ease of maintenance and replacement.
- 6. Works independently, or networks with multiple controllers for regional traffic control.
- 7. Failure flasher control: Supports software flasher and hardware flasher (only for models with flasher) independent on program control helps improve traffic safety.
- 8. Adjustable startup sequence.
- 9. Detects failures such as green conflict, lights off, red and green lights on, and designed with automatic degradation mechanism.
- 10. Multiple control methods such as cableless linking control, actuated control, pretimed control, response to pedestrian pushbutton, manual control, special status control, emergency coordination, and more.
- 11. Smooth transition mechanism for signal control helps ensure traffic safety at intersections.
- 12. Connects to traffic enforcement cameras, coils, pedestrian pushbuttons and more to collect traffic flow data and offer integrated solution of traffic signal control.
- 13. Supports up to 64-channel traffic enforcement cameras.
- 14. Different phase parameters for different cycle schemes. Supports independent parameter setting of repeated phase.
- 15. Supports 16 parent phases and 16 overlap phases. Supports repeated running of parent phase. Up to 4 rings and 4 barriers.
- 16. Up to 112 daily schemes, 48 pretimed periods, 20 weekly dispatch schemes, 16 daily dispatch schemes, 16 special dispatch schemes, and 54 cycle schemes.
- 17. Supports setting special phase, channel, and phase default status, ideal for scenes of no passing, or those require slow movement. For example, you can set no passing when red light is on, and slow movement when amber light flashes or is on.
- 18. Supports configuring the waiting area to ensure that vehicles can pass an intersection safely and orderly.

Adjustable Signal Timing

Adjusts the timing of its signals based on the traffic flow and period to enhance the smoothness and efficiency of traffic.

Emergency Handling

When an emergency occurs that requires fire trucks, ambulances, police vehicles or other emergency vehicles to travel on the road, the controller automatically adjusts the timing of its signals to give priority to the emergency vehicle so that they can quickly respond to their incident.

Scene

This traffic signal controller is ideal for various intersections for road signal control and coordination (no more than 24 channels).

Technical Specification

Function	
Flasher	Standard hardware flasher, independent on program control
Flashing Yellow	Flashing yellow during failure
Channel	4 output boards, supporting 24 channels
Types of Phases	16 parent phases and 16 overlap phases. Supports repeat running of parent phase, meeting requirements of repeat timing in a cycle and independent parameter settings
Signal Group Output	8 groups
Cycle Scheme	Up to 54 cycle schemes
Multi-period Timing	Up to 112 daily schemes, 48 pretimed periods, 20 weekly schemes, 16 daily dispatch schemes, and 16 special dispatch schemes
Pedestrian Crossing	(standard) 0 pedestrian button detector inputs, (optional) 1 pedestrian detection board that supports 8 pedestrian button detector inputs, and (optional) 2 pedestrian detection boards that support 16 pedestrian button detector inputs. A total of 2 pedestrian and vehicle detector boards are optional
Coil	(standard) 0 coil inputs, (optional) 1 vehicle detection board that supports 8 coil inputs, and (optional) 2 vehicle detection boards that support 16 coil inputs. A total of 2 pedestrian and vehicle detector boards are optional
Actuated Control	Up to 64-channel traffic enforcement cameras. 2 detecting devices (include camera, coil, and more) can be used for detecting 1 lane
Signal Control Mode	Supports manual control, pre-timed control, cableless link control, human/vehicle actuated control, adaptive control, and special mode control.
Manual Control	Side door manual control and remote control through side door or host computer to meet on-site requirements
Change of Control Modes	Natural change between manual control and automatic control (pretimed control, actuated control, and more)
Cableless Link Control	Yes. Coordination control is realized by setting offset
Special Mode Control	Supports flashing yellow, all red, and light off control

Temporary Scheme	Supports configuring or clearing temporary schemes through platform
Waiting Area	Yes
Default Light Color	Default light colors include all red, flashing yellow, solid yellow, light off, and solid red. Default light color displays when no phase is running in a scheme or no channel is configured
Special Status	Supports special status control of traffic lights, such as all red, flashing yellow, solid yellow, light off, and solid red
Count down	Self-learning, pulse, and RS-485 communication countdown timers. Supports setting baud rate when using RS-485 communication countdown timer
Timing	Manual Time Adjustment;Network Sync;GPS;NTP
Phase	Separately set parameters of phase for cycle schemes and repeated phase. Each cycle scheme can be set with different phase parameters
Signal Control Duration	Adjustable
Auto Phase Timing	When adjusting a cycle, set the total cycle length, and the phases will be timed automatically according to the split (the ratio of phase time and cycle length in a cycle)
Failure Detection	Degradation mechanism in case of green conflict and light fault; independent hardware yellow flashing control; fault information upload and search
Access Control Monitoring	Supports door open/close monitoring and reporting
Network Control	Communicates with host computer or central platform through network; supports setting temporary scheme and special tasks on platform
Information Security	Identity authentication, control order verification, update verification of operation parameters, and broadcast storm protection
Parameters Configuration	Supports setting control parameters on PC client and remote server
Update	Network upgrade, USB/TF card upgrade
Lighting	Yes, Supports door open/close and lighting linkage
Auto Maintenance	Yes

Port

Control Switch	1 main power switch, 1 flasher switch, 1 signal light control switch, 1 controller switch, and 1 socket switch
Power Input	1
PDU Output	1
Network Port	6 RJ-45 10/100 Mbps Ethernet ports: 1 on the network lightning surge protector, and 5 on the switch
RS-232	6
RS-485	4
USB	1
TF Card	1
Positioning Interface	1, GPS antenna included
Alarm Input	22 (16 pedestrian pushbutton input ports and 6 weak electricity terminal input ports)

Alarm Output	18 (16 pedestrian pushbutton output ports and 2 weak electricity terminal output ports)
General	
Power Supply	100–240 VAC;50 Hz/60 Hz
Insulation	Insulation resistance ≥10 MΩ
Voltage Withstanding	1500 VAC, 50/60 Hz (1500 VAC, 50/60 Hz voltage is applied between the power electrode or other conductive circuits connected to the power electrode and easily accessible parts such as cabinets and installation casing)
Power Consumption	≤60 W (no load)
Drive Power	≤550 W
Operating Temperature	–40 °C to +70 °C (–40 °F to +158 °F)
Operating Humidity	10%–95% (RH), non-condensing
Protection	IP54
Anti-corrosion Level	Basic Protection *The products are designed for general use and are applicable even in areas with no specific requirements for anti-corrosion protection.
Protective Features	Mains lightning protection; network lightning protection; electromagnetic immunity (no electrical failure in electromagnetic disturbance environments such as electrostatic discharge, fast electrical transient bursts, surges, and short-term voltage interruptions); waterproof (passed rain test. The signal controller works normally during and after the test, and there is no water seepage or accumulation inside the signal controller); dustproof (during and after the dust test, the signal controller works normally, and there is no large amount of dust inside the signal controller); corrosion (the signal controller works normally after the salt spraying test, and there is no serious corrosion of metal components such as the signal controller casing and internal rack); passed vibration test and steel ball impact test
Product Dimensions	604.4 mm × 600.0 mm × 1397.7 mm (23.8" × 23.62" × 55.03") (L × W × H), without GPS antenna 604.4 mm × 600.0 mm × 1397.7 mm (23.91" × 23.62" × 40.66") (L × W × H), with GPS antenna
Packaging Dimensions	773.0 mm × 747.0 mm × 1860.0 mm (30.43" × 29.41" × 73.23") (L × W × H)
Net Weight	100.0 kg (220.47 lb)
Gross Weight	120.0 kg (264.56 lb)
Installation	Floor-standing
Remote control	Included
RF433M Modulation Type	FSK
RF433M Frequency Range	433.05 MHz–434.79 MHz
RF433M Power Transmission	10 mw (ERP)

Ordering Information		
Type	Model	Description
Traffic Signal Controller	DHI-ITRTSC-M24B-HS	Dahua Traffic Signal Controller
	ITRTSC-MB-TXB	Communication Board
Accessories (Optional)	DHI-ITC431-RW4F	Dahua 4MP All-in-One Enforcement Camera
	DH-IPC-HFW71242H-Z-X	12MP IR Bullet WizMind Network Camera
	DHI-ITC431-SU1F-FIR	4MP Smart Vehicle Detector
	ITRTSC-MB-HSQ	Flasher
	ITRTSC-MB-YKQ	Remote Control
	CHS4212-8GT-110	12-Port Managed Hardened Gigabit Switch with 8-Port PoE
	ITRTSC-MB-XRJCB	Pedestrian Detection Board
	ITRTSC-MB-ZKB	Main Control Board
	ITRTSC-MB-CLJCB	Vehicle Detection Board
	ITRTSC-MB-DYB	Power Board
	DH-WM4720-OW	Industrial 4G Router
	ITRTSC-MB-DKB	Traffic Signal Control Board
	ITRTSC-MB-RF	RF board
	ITRTSC-MB-CMSKB	Manual Control Panel
	ZZM10/PDU(8 USA 250)	8 outlet rackmount power strip
	ITRTSC-MB-JXB	Wiring Board (with relay)

Accessories

Optional:



ITRTSC-MB-TXB
Communication Board



DHI-ITC431-RW4F
Dahua 4MP All-in-One
Enforcement Camera



DH-IPC-HFW71242H-Z-X
12MP IR Bullet WizMind
Network Camera



DHI-ITC431-SU1F-FIR
4MP Smart Vehicle
Detector



ITRTSC-MB-HSQ
Flasher



ITRTSC-MB-YKQ
Remote Control

Optional:



CHS4212-8GT-110
12-Port Managed
Hardened Gigabit Switch
with 8-Port PoE



ITRTSC-MB-XRJCB
Pedestrian Detection
Board



ITRTSC-MB-ZKB
Main Control Board



ITRTSC-MB-CLJCB
Vehicle Detection Board



ITRTSC-MB-DYB
Power Board



DH-WM4720-OW
Industrial 4G Router



ITRTSC-MB-DKB
Traffic Signal Control
Board



ITRTSC-MB-RF
RF board



ITRTSC-MB-CMSKB
Manual Control Panel



ZSM10/PDU(8 USA 250)
8 outlet rackmount
power strip



ITRTSC-MB-JXB
Wiring Board (with relay)

Dimensions (mm[inch])

