ClairLup-V4

4-Channel Inductive Loop Detector

Overview

The ClairLup-V4 4-channel inductive loop detector employs a high-performance processor, stable and reliable circuit design, and advanced detection algorithms specially optimized for real-time detection, interference resistance, deadlock prevention, environmental status monitoring, and handling of abnormal conditions. This ensures that the detector operates without the need for maintenance over the long term, significantly reducing user operational costs and enhancing the overall value of user systems.

The ClairLup-V4 detector finds wide applications in traffic enforcement, weighing, toll booth, and other systems for urban roads, highways, bridges, tunnels, and similar road segments.

Key Features

- Supports close placement of loops, with a loop-to-loop distance of less than 10cm.
- Supports cascade function; when multiple devices are cascaded, the loops of different devices can effectively avoid interference.
- Supports cascade line self-checking function to ensure a reliable connection of the cascade lines.
- Detection response time is less than 8 milliseconds, meeting the reliable detection needs of various high-speed road vehicles.
- Supports 4-level loop frequency adjustment.
- Supports directional logic detection, enabling the output of corresponding pulse signals based on the direction of vehicle movement.
- Rapidly and intelligently updates the background frequency, continuously tracking changes in environmental parameters.
- Utilizes advanced intelligent anti-lock algorithms to ensure long-term, maintenance-free operation.
- Supports real-time display of passing vehicle waveforms, allowing for a detailed understanding of all vehicle passage details through the loops. This greatly facilitates on-site issue analysis and troubleshooting, making installation and environmental problems instantly apparent.
- Supports real-time loop fault detection and automatically returns to normal operation after the fault is resolved.
- Supports loop open and short circuit detection, distinguishing between loop fault types through fault indicator lights.
- Offers flexible I/O output capabilities, with configurable I/O output functions.

Specification

Model	ClairLup-V4
Processor	32-bit high-performance ARM
Loop Connection	4-channel loop input
Loop Protection	Supports TVS and transformer isolation
I/O Output	5-channel solid-state relay outputs, configurable output modes
LED	Bicolor indicator light, indicating loop and vehicle presence status
Detection Mode	Polling mode, in cascade mode supports parallel detection mode
Device Cascading	Supports multiple devices cascading, supports one master and multiple slave mode
Parameter Configuration	Flexibly configure various operational parameters of the vehicle detector through dip switches
Fundamental Frequency Refresh	Automatically update the reference frequency and track real-time environmental changes
Capture Rate	≥99.9%
Vehicle Separation	Vehicle separation accuracy is ≥99% under normal driving conditions
Fault Recovery	Real-time detection, automatic recovery after fault clearance
Auto-Tuning	Supports automatic tuning function
Response Time	8ms
Oscillation Frequency	Supports 4-level frequency adjustment
Baud Rate	57600 (Baud rate switch set to ON); Configurable baud rates: 4800, 9600, 19200, 38400, 57600, 115200; default is 115200 (Baud rate switch set to OFF).
Loop Inductance	10-2000μH
Fault Detection	Supports loop open circuit and short circuit detection
Sensitivity Adjustment	8-level adjustable (dip switch configuration), supports sensitivity adjustment via serial port
Communication Interface	1 RS485 serial port
Cascade Interface	Front panel reserved for a multifunctional interface, supports cascading
Power Supply	12/24VDC, supports reverse polarity protection
Power Consumption	1.5W
Operating Temperature	-40 to 85°C (-40 to 185°F)
Operating Humidity	10-95%, (non-condensing)
Dimension	W*D*H: 118*98*28(mm), 4.65*3.86*1.10(inches)
Weight	370g

Ordering Information

ClairLup-V4: 4-channel inductive loop detector.