



VOLATILE ORGANIC COMPOUNDS ONLINE MONITORING SYSTEM

Product Introduction

Zhice Yunlian Volatile Organic Compounds Online Monitoring System delivers high detection accuracy and rapid response, and supports real-time online monitoring of TVOC concentration.

The device is equipped with 4G wireless transmission, breakpoint resume, temperature & humidity compensation and remote calibration functions, and is applicable to scenarios including industrial emission monitoring, plant boundary supervision, university research experiments, environmental science research, laboratory data analysis, teaching demonstration and research projects.

It is fitted with a 7-inch touch LCD screen, complies with the HJ212-2005 protocol, and can be connected to government regulatory platforms and university research data platforms.

Optional modules including constant temperature unit, audible and visual alarm, external LED display and ultrasonic weather station are available to meet both scientific research and engineering application requirements.

Function Description

Multi-channel synchronous monitoring

Real-time data visualization

Remote data transmission

Safety and stability monitoring



Equipment Types



● Basic pole-mounted type



● Custom cabinet type

Structure Description

1. Basic Pole-mounted Type

- Compact integrated design, pole mount, small footprint, quick deployment.
- IP67, suitable for outdoor: industrial park boundaries, roadside monitoring.
- Built-in pump sampling, TVOC detection, data processing & transmission module.
- Optional top-mounted: audible/visual alarm, ultrasonic weather station.

2. Custom Cabinet Type

- Spacious cabinet, supports expansion: constant-temp devices, multi-channel sampling interfaces. Dustproof, waterproof, corrosion-resistant; constant temperature & humidity control. • Ideal for chemical parks, key pollution sources.
- Integrated multi-channel sensors, data storage, remote access. High-precision, long-term, multi-parameter monitoring.

Product Parameters

Category	Item	Specification
Display Unit	Display	7-inch true color LCD screen
	Operation	Touch operation
Alarm	Audible & visual alarm	Alarm threshold configurable (optional)
Transmission Standard	Data protocol	Online automatic monitoring for pollution source data System data transmission standard: HJ212-2005
Communication Interface	Sensor interface	RS485/Modbus
	Data communication	4G wireless transmission, upload interval configurable
Working Environment	Temperature	Subject to selected housing material
	Humidity	5%RH ~ 95%RH
	Power supply	AC220V±10%, 50Hz
System Parameters	Power consumption	≤15W
	Housing protection rating	Optional housing materials, up to IP67
	Explosion-proof rating	Customizable
	Sampling method	Pump suction type

TVOC Probe

Item	Electrochemical	PID Photoionization
Measuring range	0~20ppm, 40ppm, 200ppm optional	—
Linearity error	≤10%FS	±5.0%FS
Operating temperature	-10 ~ 45°C	-14 ~ 45°C
24h zero drift	≤±20%FS	±5%FS
24h span drift	≤±20%FS	±5%FS
Response time	< 90s	14.7s
Repeatability	≤10%	≤3%
Parallelism	≤20%	≤5%

Measurement Components

Category	Typical Detectable Components	Description
Aromatic Hydrocarbons	Benzene, toluene, ethylbenzene, xylene (o-/m-/p-), styrene	Industrial emission identification, indoor air quality assessment, environmental health risk assessment, photochemical smog formation research
Aliphatic Hydrocarbons (NMHC)	Methane, ethane, propane, butane, isoprene, n-hexane	Oil & gas leak monitoring, biogenic emission research, non-methane hydrocarbon calculation, ozone formation potential analysis
Halogenated Hydrocarbons	Trichloromethane, carbon tetrachloride, dichloromethane, vinyl chloride, freons	Solvent usage analysis, ozone-depleting substance (ODS) monitoring, groundwater pollution tracing, atmospheric halogen cycle research
Oxygenated VOCs	Formaldehyde, acetaldehyde, acetone, ethyl acetate, ethanol, methyl ethyl ketone (MEK)	Secondary organic aerosol precursor research, industrial waste gas treatment evaluation, photochemical oxidation mechanism analysis
Terpenes	α-pinene, β-pinene, limonene	Forest/vegetation biogenic emission monitoring, atmospheric chemistry simulation, regional air quality model input
Other Components	Thiols, amines, partial aldehydes & ketones, low-molecular-weight VOCs	Odor pollution tracing, unorganized emission monitoring in chemical parks, emerging organic pollutant screening



Specification Types

Parameter Category	Basic Pole-mounted Type	Custom Cabinet Type
Device Name	Volatile Organic Compounds Online Monitoring System	Ambient Air VOCs Continuous Monitoring System
Form Factor	Integrated compact pole-mounted design	Industrial standard cabinet design
Typical Installation Scenarios	Industrial park boundaries Roadside areasOpen outdoor sites	Chemical industrial parks Key pollution source enterprises Complex industrial environments
Structural Features	Main unit integrated in protective enclosure, small footprint, fast deployment	Cabinet enclosure with sufficient internal space, supports expansion of constant temperature units and multi-channel sampling ports
Protection Rating	Up to customizable IP67	Up to customizable IP67
Core Components	Pump suction sampling module, TVOC detection unit, data processing & transmission module	Multi-channel sensor, data storage unit, remote access interface
Optional Configurations	Top-integrated audible & visual alarm lamp, ultrasonic weather station	Expandable professional constant temperature unit, multi-channel sampling interfaces
Reference Dimensions	Protective enclosure: approx. 400×300×200mm Pole height customizable (typical 2–3m)	1600×600×600mm(height customizable)
Installation Method	Pole clamp mounting	Floor-standing / foundation fixed installation
Core Monitoring Capability	TVOC online monitoring	High-precision, long-period, multi-parameter continuous monitoring
Applicable Conditions	General outdoor environments, rainproof, dustproof, splash-proof	Complex industrial environments, adaptable to high temperature, high humidity and corrosive gas conditions





Introduction to the upper computer software

Function Category	Specific Description
Core Functions	Realize integrated management of data reception, storage, viewing and analysis in the PC standalone environment
Data Reception and Processing	1. Support data reception via serial port, as well as data processing and visual display 2. Compatible with communication methods such as JSON string and MODBUS485
Parameter Configuration	1. Allow independent setting of data storage time 2. Support custom collection time in MODBUS485 collection mode
Monitoring Parameter Management	Support users to independently add, delete and modify monitoring parameters, including information such as parameter protocols, names and icons
Data Processing Expansion	1. Equipped with data post-processing function 2. Support external running of JAVASCRIPT scripts



Introduction to Cloud Platform

Function Category	Specific Description
Architecture & Access Method	Adopts a CS architecture software platform, supporting direct access and observation via mobile phones and PC browsers without additional software installation
Account & Device Management	Supports multi-account and multi-device login, meeting the collaborative management needs of multiple users and terminals
Data Display Function	1. Provides dashboards for real-time data display and historical data display 2. Supports data curve analysis 3. Supports map display and device information viewing
Data Storage & Stability	Implements cloud data storage based on cloud servers, featuring stability, reliability, easy scalability and load balancing
Alarm & Threshold Management	Supports SMS alarm function, allowing custom alarm threshold settings to respond to abnormal data in a timely manner
Data Processing & Output	1. Supports data export in table format 2. Has data post-processing function 3. Supports external running of JAVASCRIPT scripts to enhance customization capabilities
Data Forwarding Function	Supports data forwarding via multiple protocols, including HJ-212 protocol, TCP forwarding, HTTP protocol, etc.

