麦芽传感科技
Maiya Sensor Technology

MST 6 0 0 P

Portable Six-in-one Gas Detector

Product introduction

The portable composite gas detector can be used for: mobile, rapid, and accurate detection of the concentrations of a variety of gases, as well as the measurement of environmental temperature and humidity. If the measured values exceed the limit values, the alarm will sound. It adopts a 2.5-inch high-definition color screen for real-time display. The gas sensors of internationally well-known brands are used, and the main detection principles include electrochemical, infrared, catalytic combustion, thermal conductivity, PID photoionization, etc. It also adopts Swiss high-precision capacitive digital temperature and humidity sensors. With an advanced circuit design, a mature core algorithm processing system, and a unique exterior design, it has obtained a number of patents in aspects such as software works and exterior appearance. This detector is suitable for detecting the concentrations of gases in the atmospheric environment within pipelines or confined spaces. It can also be used to detect gas leakage and the purity of various high-concentration single gases with nitrogen or oxygen as the background gas. The number of detectable gas types is more than 500.

Features and benefits

- Rich human-machine interface
- It is possible to simultaneously detect 1 ~ 6 types of gases, and the units can be switched freely
- Function of large-capacity data storage (capacity can be customized)
- Various kinds of communication interfaces and printing functions
- High temperature gas detection (optional) The optional high-temperature
- Graphical display, and use the form of curve to reflect the trend of gas concentration changes in a certain period of time
- Data recovery function; in case of mis-operation, it is possible to select partial or full recovery
- It is possible to set whether to display the maximum value, minimum value, average value or not
- Standard USB charging port, with charging protection function, USB hot-plug supported, and the charging status instrument can work properly
- 6000mA high capacity rechargeable polymer battery is adopted, so it is possible to work for a long period of time
- Real-time detection or timing detection is supported; when no detection will be done, it is possible to shut down the pump so as to extend the startup time
- Multiple alarm modes, and multi-directional and three-dimensional indication alarm states
- Multiple alarm mode settings: low alarm, high alarm, interval alarm, and weighted average alarm
- Chinese and English interfaces can be selected
- Zero-point automatic tracking; long-term use will not be affected by the zero drift
- Multi-level calibration for target points, can ensure the linearity and accuracy of the measurements

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Technical parameters

Gases to be detected	Arbitrary combination of 1 ~ 6 types of gases such as toxic gases, oxygen gas, carbon dioxide, inflammable and explosive gases, TVOC, and so on. Optional configuration: temperature and humidity measurements.				
Application scenarios	All the cases which requires the portable rapid detection of gas concentrations such as petroleum, chemical, pharmaceutical, environmental protection, combustion gas distribution, warehousing, smoke gas analysis, air governance, and so on.				
Detection range	0 ~ 1, 10, 100, 1000, 5000, 50000, 100000ppm, 200 mg/L, 100%LEL, 20%, 50%, 100%Vol, can be selected; and other ranges can be customized.				
Resolution	0.01ppm or 0.001ppm (0 ~ 10 ppm);0.01ppm (0 ~ 100 ppm), 0.1ppm (0 ~ 1000 ppm), 1ppm (0 ~ 10000 ppm or more), 0.01 mg/l (0 ~ 200 mg/l), 0.1% LEL, 0.01%, 0.001% Vol				
Detection principle	Electrochemical, catalytic combustion, infrared, thermal conductivity, PID photoionization, and so on, depending on the type of gas, range, field environment and user demand.				
Sensor service life	Electrochemical principle: 2 ~ 3 years; Oxygen gas: 2 years or 6 years can be selected; infrared principle: 5 ~ 10 years; catalytic combustion: 3 years; thermal conductivity: 5 years; PID photoionization: 2 ~ 3 years.				
Allowable error	≤±1% F.S (other precision levels can be customized)				
Linearity	≤±1%	**Repeatability**	≤±1%	**Uncertainty**	≤±1%
Response time	T90≤20 seconds			**Recovery time**	≤30 seconds
Working environment	Temperature:-40℃~+70℃,humidity:≤10～95%RH,and built-in filters can be used in high humidity or high dust environment.				
Sample gas temperature	-40 ℃ ~ + 70 ℃, and the optional configuration of high-temperature sampling and cooling filter handle will be possible to detect the smoke gas at the temperature of 1300 ℃.				
Temperature and humidity measurement	Optional configuration: temperature at -40 ℃ ~ + 70 ℃, accuracy level at 0.5 ℃; humidity at 0 ~ 100% RH, precision level at 3 % RH				
Power supply	3.7VDC, 6000mA high capacity rechargeable polymer battery				
Display mode	2.5-inch high-definition color screen				
Detection mode	Built-in pump-suction type measurement, and flow rate at 500 ml / min. Calibration flow rate should be greater than 500 ml / min, three-way pipe should be connected, so as to ensure that the excessive gas will be discharged from the bypass.				
Alarm mode	It is possible to set as sound & light alarm, vibration alarm, sound & light + vibration alarm, turning off the alarm.				
Communication interface	USB (charging and communication),optional: RS232, infrared communication, automatic recognition				

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Data storage	Standard configuration is the data storage capacity for 100, 000 entries; SD card storage function is optional configuration
Protection level	IP67
Explosion-proof type	Intrinsically safe type
Explosion-proof mark	Ex ia IIC T4 Ga
Exterior dimensions	195×77×46mm(L×W×H)
Weight	350g
Standard accessories	Manual, qualification certificate, warranty card, USB charger (including the data cable), high-grade aluminum instrument case, belt clip, humidity dust filter
Optional items	Temperature and humidity measurement function, 1.2 m retractable sampling handle (1-10 meter hose, and the standard length is 1 meter), 0.4 meter stainless steel sampling handle (with dust filter, not retractable), high temperature sampling and cooling filter handle, high temperature humidity pretreatment system, multiple humidity dust filter, hanging rope, CD-ROM (upper level computer communication software), external mini wireless infrared printer
Detection mode	Built-in pump-suction type measurement, and flow rate at 500 ml / min. Calibration flow rate should be greater than 500 ml / min, three-way pipe should be connected, so as to ensure that the excessive gas will be discharged from the bypass

Part of gases specifications are as following:

Gases	Range	accuracy	resolution	response time	Principle
oxygen (O_2)	0-30%/100%VOL	＜±3%(F.S)	0.1%VOL	<15s	EC
combustible gas (Ex)	0-100%LEL	＜±3%(F.S)	0.1%LEL	<10s	Catalytic Oxidation
	0-100%LEL/VOL	＜±3%(F.S)	0.1%LEL/VOL	<10s	NDIR
carbon oxide (CO)	0—1000/2000ppm	＜±3%(F.S)	0.1ppm	<25s	EC
hydrogen sulfide (H_2S)	0-100/2000ppm	＜±3%(F.S)	0.1/1ppm	<30s	EC
sulfur dioxide (SO_2)	0-100ppm	＜±3%(F.S)	0.1ppm	<30s	EC
Nitric Oxide (NO)	0-250ppm	＜±3%(F.S)	1ppm	<30s	EC
nitrogen dioxide (NO_2)	0-20ppm	＜±3%(F.S)	0.1ppm	<60s	EC
Chlorine (Cl_2)	0-20ppm	＜±3%(F.S)	0.1ppm	<30s	EC
Ammonia (NH_3)	0-100ppm	＜±3%(F.S)	0.1/1ppm	<50s	EC

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hydrogen (H_2)	0-1000ppm	＜±3%(F.S)	1ppm	<60s	EC
hydrogen cyanide(HCN)	0-50ppm	＜±3%(F.S)	0.1ppm	<100s	EC
hydrogen chloride (HCl)	0-20ppm	＜±3%(F.S)	0.1ppm	<60s	EC
hydrogen phosphide(PH_3)	0-20ppm/1000ppm	＜±3%(F.S)	0. 1ppm	<25s	EC
Ozone (O_3)	0-20ppm	＜±3%(F.S)	0.01ppm	<30s	EC
chlorine dioxide (ClO_2)	0-20ppm	＜±3%(F.S)	0.1ppm	<30s	EC
ethylene oxide (C_2H_4O,ETO)	0-100ppm	＜±3%(F.S)	0.1ppm	<45s	EC
Formaldehyde (CH_2O)	0-20ppm	＜±3%(F.S)	0.01ppm	<30s	EC
silane(SiH_4)	0-50ppm	＜±3%(F.S)	0.1ppm	<60s	EC
hydrogen fluoride (HF)	0-10ppm	＜±3%(F.S)	0.1ppm	<60s	EC
fluorine (F_2)	0-1ppm	＜±3%(F.S)	0.01ppm	<60s	EC
Phosgene ($COCl_2$)	0-1ppm	＜±3%(F.S)	0.01ppm	<60s	EC
Total Volatile Organic Compound gases (TVOC)	0-10/100/2000ppm	＜±2%(F.S)	0.01/0.01/0.1ppm	<30s	EC
Total Volatile Organic Compound gases (TVOC)	0-10/100/2000ppm	＜±2%(F.S)	0.01/0.01/0.1ppm	<30s	PID

Note: please call us to consult about other gases and other detection range which are not listed in the above table.

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