麦芽传感科技
Maiya Sensor Technology

# MST 700

## Portable Composite Gas Analyzer




### Product introduction

The portable composite gas analyzer can be used in: accurate detection and analysis of a variety of gas concentration and measurement of environmental temperature and humidity. adopted 3.5-inch high-definition color screen for real-time display, adopted the gas sensors of internationally well-known brands, and the main detection principles include: electrochemical, infrared, catalytic combustion, thermal conductivity, PID photoionization, and so on. Adopted Swiss high-precision capacitive digital temperature and humidity sensors. Advanced electric circuit design, mature kernel algorithm processing, unique external appearance design, had achieved a number of patents about the software works, external appearance, and so on. is suitable for detecting the concentrations of gases in the atmosphere environment in the pipeline or confined space; and the purity of the gas leakage and various high concentration single gases with the background gas as nitrogen gas or oxygen gas. The types for detection are more than 500 types.

### Features and benefits

- Rich human-machine interface
- Infrared remote control
- It is possible to switch among three display modes
- Chinese and English interfaces can be selected
- It is possible to simultaneously detect 1 ~ 6 types of gases, which can be expanded to 18 or more types of gases, and the units can be switched freely
- Built-in pump-suction type measurement, built-in water vapor and dust filter, fast response, and the long-distance sampling is supported
- Function of large-capacity data storage (capacity can be customized), multiple storage modes are supported, and remote wireless transmission function is optional configuration
- Various kinds of communication interfaces and printing functions
- Mis-operation recognition function: automatic recognition and prevention of the concentration calibration mis-operation, which is possible to avoid the poor performance that may be caused by human factors
- Graphical display, and use the form of curve to reflect the trend of gas concentration changes in a certain period of time
- 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
- 10000mA 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.
- 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

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| **Gases to be detected** | Arbitrary combination ofl～6 types of gases which can be expanded to 18 or more types of gases, such as toxic gases, oxygen gas, carbon dioxide, inflammable and explosive gases, TVOC, and so on.<br>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),lppm(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:3years; thermal conductivity:5 years;PID photoionization:2～3 years. | | | | |
| **Allowable error** | ≤±2% F.S(other or higher precision levels can be customized) | | | | |
| **Linearity** | ≤±2% | Linearity | ≤±2% | Linearity | ≤±2% |
| **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 maximum temperature of 1300 ℃ | | | | |
| **Temperature and humidity measurement** | Optional configuration: temperature at-40℃~+70℃,accuracy level at 0.5 ℃;humidity at 0～100%RH,precision levelat 3%RH | | | | |
| **Power supply** | 3.7VDC,5400mAh×2 high capacity rechargeable polymer battery | | | | |
| **Display mode** | 3.5-inch high-definition color screen | | | | |
| **Detection mode** | Built-in pump-suction type measurement, and flow rate at 800 ml/min.Calibration flow rate should be greater than 800 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, turning off the alarm. | | | | |
| **Communication interface** | USB(charging and communication),communication, automatic recognition | | | | |
| **Data storage** | Standard configuration is the data storage capacity for 100,000 entries;SD card storage and USB disk storage functions are optional configuration | | | | |
| **Protection level** | IP66 | | | | |

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| **Explosion-proof type** | Intrinsically safe type |
| **Explosion-proof mark** | Ex ia IC T4 Ga |
| **Exterior dimensions** | 255×210×125mm(L×H×W)<br>420×210×125mm(L×H×W)custom-made |
| **Weight** | 2.5Kg |
| **Standard accessories** | Manual, qualification certificate, warranty card, USB charger(including the data cable), high-grade aluminum instrument case, built-in humidity dust filter,0.4 meter stainless steel sampling handle(1 meter of hose, with dust filter, not retractable), |
| **Optional items** | Temperature and humidity measurement function, 1.2 m retractable sampling handle(1-10 meter hose, and the standard length is l meter),external remote sampling pump, high temperature sampling and cooling filter handle, high temperature humidity pretreatment system, CD-ROM<br>(upper level computer communication software), external mini wireless infrared printer, built-in mini printer, SD card storage, USB disk storage,wireless data communications |

**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 |
| 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 |

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| 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) | 0.01/0.01/0.1 ppm | <30s | EC |
| Total Volatile Organic Compound gases ( TVOC ) | 0-10/100/2000ppm | ＜±2%(F.S) | 0.01/0.01/0.1 ppm | <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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