麦芽传感科技
Maiya Sensor Technology

MST F210/F210M

Online Type Gas Detector



Product introduction

Online type gas detector can be used in 24 hours continuous online monitoring of field gas concentration, 1.7-inch high-definition color screen will be used for the display of the field concentration, with field sound & light alarm (optional) when exceeding the standard, and remote signal transmission. The gas sensors of internationally known brands are adopted, and the main detection principles include: the gas sensors under the principle of electrochemical, infrared, catalytic combustion, thermal conductivity,PID photoionization, 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. Strong, durable and explosionproof shell is suitable for the use at a variety of hazardous places and harsh industrial environments, is widely used in the industries such as petroleum, chemical, metallurgy,refining,gas transmission and distribution, biochemical and pharmaceutical, and so on.

Features and benefits

- Diversified communication methods
- Rich human-machine interface
- Infrared remote control
- Chinese or English interfaces can be selected
- 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), and multiple storage modes are supported
- It is possible to switch among three display modes
- Graphical display, and use the form of curve to reflect the trend of gas
- 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
- 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

Gases to be detected	Arbitrary combination of multiple types of gases such as toxic gases,oxygen gas, carbon dioxide, inflammable and explosive gases,TVOC, and so on. Optional configuration: it is possible to simultaneously detect any 1~6 gases as well as temperature and humidity.				
Application scenarios	All the cases which requires the fixed installation, and online 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,200mg/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/1), 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:2～3years; Oxygen gas:2 years or 6 years can be selected; infrared principle:5～10 years; catalytic combustion:3 years; thermal conductivity:5 years.				
Allowable error	≤±2%F.S(Other or higher accuracy level can be customized)				
Linearity	≤±1%	**Repeatability**	≤±1%	**Uncertainty**	≤±1%
Response time	T90≤30 seconds			**Recovery time**	≤30seconds
Signal output	Bus system RS485(RTU),three(four) wire system 4 ～ 20mA,optional configuration:0 ～ 20mA,1～5V,0～5V,0～10V,wireless transmission, network transmission, and SMS alarms.				
Working environment	Temperature:-40℃~+70℃,humidity:≤10～95%RH(regular) non-condensing case It should be customized in the case of use in the condensing case,or the use environment should be specified at the time of ordering Range of working pressure:atmospheric pressure±30%,some sensors can detect under the pressure of7 kg				
Display method	2.5-inch high-definition color screen for field display, it is possible to select no field display, or the optional configuration of MIC2000 controller for remote display, control, and alarm				
Working voltage	12～36V DC direct current,the standard power supply for a single equipment is 24V, DC stabilized voltage switching power supply of 1A or greater than 1A				

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Power consumption	Instantaneous maximum electric current: electrochemical principle:60 mA, catalytic or infrared principle:120 mA
Power supply reference	The switching power supply of24V,2.1A is possible to drive 30 units of toxic gas detector, or 15 units of flammable, infrared gas detector
Working method	Fixed type installation, online detection, diffusion type measurement; and it is possible to select the measurement of pipeline type, flowthrough type, and pump-suction type.
Installation method	Pipeline type, and wall mounting type. The working pressure of the pipeline type is±30% of atmospheric pressure, and when exceeded this range, it is necessary for the depressurization treatment.
Alarm method	The default option is l-way, and it is possible to select 3-way passive contact(dry contact) output, level III alarm, and the alarm point can be set.Field sound & light alarm (optional configuration).
Connecting cable	Adopted 4～20mA three-core shielding cable, adopted four-core for RS485,when the distance exceeded 100 meters, the single wire diameter≥1.5mm; both ends of the shielding layer will be connected to the ground, and good grounding should be ensured.
Protection level	IP66,prevent the water splash and short-period rain
Explosionproof type	Explosion suppression type
Explosionproof mark	Ex d IC T6 Gb
Exterior dimensions	260×180×90mm(LxHxW)complex gas cell 260×230×90mm(L×HxW)complex gas cell and include Alarm 240×180×90mm(L×HxW)single gas cell 240×230×90mm(LxHxW)include Alarm
Weight	1.8Kg
Standard accessories	Manual, qualification certificate, warranty card, outer packaging box
Optional items	Integrated sound & light alarming device, split-type sound & light alarming device,24V DC stabilized voltage power supply,accessory for connection with computer for monitoring: free upperlevel host software, RS485 /RS232 converter, For laptop without RS232 interface, USB /RS232 converting and connecting cable is needed, if the network transmission is needed,TCP/IPconverter will be further needed.Larger capacity accessory for the data storage: SD card.
Wireless transmission	Optional function is possible to transfer data wirelessly to the cell phone, remote monitoring center, monitoring computers and other monitoring equipment, which will utilize the upper-level host to realize the functions of data analysis, storage, printing or the like on the computer

Pretreatment system	Optional configuration: room temperature and high humidity pretreatment system, high temperature and high humidity pretreatment system, high temperature and high humidity and high dust pretreatment system
Temperature and humidity measurement	Optional: temperature:-40℃~+120℃,accuracy:0.3℃ humidity:0-100% RH,accuracy:3%RH
Installation type accessories	Optional configuration: wall mounting bracket, mounting clips for fixation on the pipes(1/2",3/4"pipe), stainless steel threaded welding seat or flange to be installed on the pipeline(it is necessary to mark the flange or pipe size, such as DN50,DN15…),rain cover,24VDC or 220AC sampling pump (sampling distance is 10 m), vacuum pump(sampling distance is 40 m),24V switching power supply, pressure reducing valve, flow meters.

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 (C2H4O,ETO)	0-100ppm	＜ ±3%(F.S)	0.1ppm	<45s	EC
Formaldehyde (CH20)	0-20ppm	＜ ±3%(F.S)	0.01ppm	<30s	EC
silane(SiH4)	0-50ppm	＜ ±3%(F.S)	0.1ppm	<60s	EC
hydrogen fluoride (HF)	0-10ppm	＜ ±3%(F.S)	0.1ppm	<60s	EC
fluorine (F2)	0-1ppm	＜ ±3%(F.S)	0.01ppm	<60s	EC
Phosgene (COCl2)	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.