

Ultraviolet photometry analyzer

Overview

Ultraviolet photometry analyzer has 2 measuring ranges as ppm or Vol.-%, and can also realize high-precision up to ppb range. It can measure 2 gas components simultaneously by using 2 UV-LEDs. Nitrogen oxides (NO+NO₂), aromatic hydrocarbons, hydrogen sulphide, ozone, sulphur dioxide and chlorine can be measured.

Principle

UV-LED radiation is divided into measurement and reference paths by a beam splitter. The reference beam directly reaches the detector, which converts it into a reference voltage value. Using this reference signal, the aging effect of UV-LED can be almost completely compensated. The measuring beam enters the sample cell, and the gas in the sample cell is absorbed by the radiation in it. The absorption behavior is recorded by the measuring detector and used to calculate the gas concentration in the measuring cuvette.

Application

- Environmental and Process Measurement Technology (CEM)
- Engine development
- Elemental analysis
- Industrial gas analysis
- Natural gas/biogas analysis
- Process measurement technology
- Biogas research

Measurement components and ranges

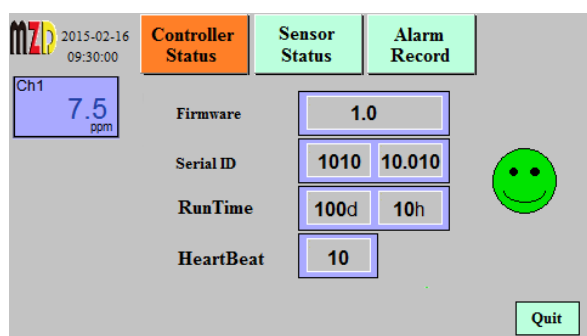
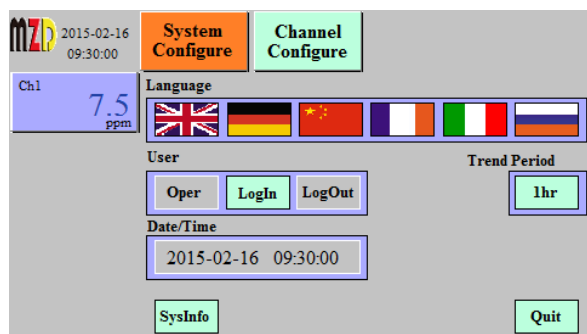
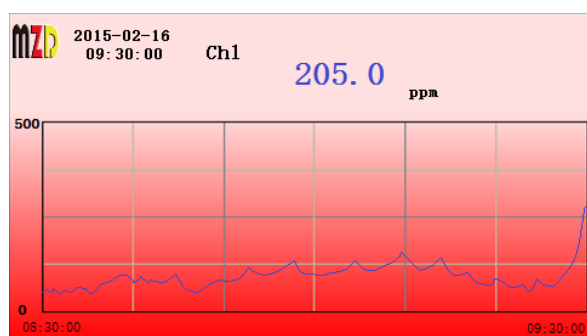
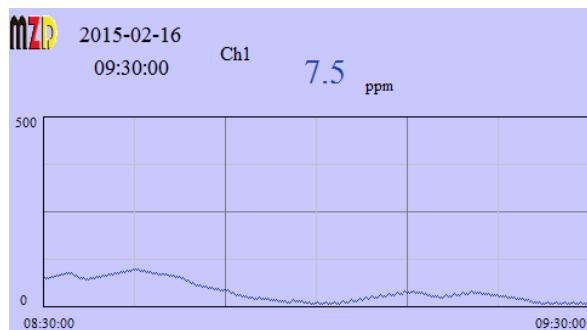
- ❖ SO₂: 0~10ppm up to 10% (Vol)
- ❖ NO: 0~300ppm up to 5,000ppm
- ❖ NO₂: 0~10ppm up to 5,000ppm
- ❖ O₃: 0~1ppm up to 5,000ppm
- ❖ Cl₂: 0~100ppm up to 30% (Vol)
- ❖ H₂S: 0~100ppm up to 1%



Features

- ❖ Linearity error: $\pm 0.5\%$ FS or 1 % F.S
- ❖ Sensor sample cell: stainless steel with inert coating (inside and outside)
- ❖ PEEK cell for corrosive gases (H₂S, chlorine) on request
- ❖ High dynamic range, 1:100
- ❖ Fast response time, t₉₀ < 1 s possible
- ❖ No water vapour cross sensitivity different to NDIR gas sensors

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Features

❖ Quick and convenient

The navigation menu contains 6 languages, which can be operated easily.

❖ Process safety

4.3" or 7" large size color LCD touch screen, convenient and safe touch operation and debugging

Large size screen with red flashing alarm, clearly visible from long distances and in dark areas

Alarm immediately, save the process

❖ Alarm event record

Real-time data curve display

Record function for up to 6,000 alarms

❖ Expert calibration function

Multi-point calibration function up to 9 point

❖ Powerful self-diagnosis function

Built-in heartbeat monitoring function and watchdog

Monitor the status of analyzer and sensors, and promptly remind customers to take necessary maintenance

High-standard hardware and software security and password protection

❖ Powerful control function

High(low) limit control function

Optional: Timer control(automatic cleaning) function

Optional: analog PID control function

Optional: PWM control function

❖ Flexible fieldbus communication functions for IOT4.0

Optional fieldbus MODBUS, HART, Foundation Fieldbus FF, PROFIBUS PA, PROFIBUS DP, etc.



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Parameters

Measuring principle	NDUV(Non-dispersive UV method) or UVRAS(Ultraviolet Resonance Absorption Spectrometer)		
Display	4.3" or 7" industrial color touch screen		
Language	Multi-Language (English, German, Chinese, French, Italian, Russian or Customized)		
Linearity error	< 0.5%FS or 1%F.S		
Sensitivity	0.1ppm or 0.01%		
Warmup time	1-30 Minutes		
Response Time	Less than 1 s		
Zero point stability	2% of span		
T90-time	<1sec at flow rate higher 60l/h		
Detection limit (4·STDW)	< 1% of span		
Lifetime of the UV Radiation source	> 20 000h		
Gas pressure	800-1200 hPa (mbar)		
max. Pressure	4bar		
Analog Output(Galvanic)	4~20mA, maximum load 500Ω		
Relay Output(Galvanic)	Relay(2A, 230V AC freely set alarm), System alarm		
Diagnosis function	Flow monitoring, Sensor and analyzer self-diagnosis, Heartbeat monitoring		
Event Logger	Internal Flash, up to 6,000 alarm records		
Control function	Optional Timer control function, PID, PWM		
Calibration	Expert calibration function, Multi-point calibration function up to 9 point		
Communication	RS485 MODBUS RTU, HART, Foundation Fieldbus FF, PROFIBUS PA, PROFIBUS DP, MODBUS TCP/IP, etc		
Power	80~264V AC, 1A or 19~28V DC, 3A		
Electrical protection	EMI / RFI CEI-EN55011 – 05/99		
Ambient Temperature	5 ~ 50°C		
Storage and transport temperature	-20 ~ 70°C		
Process Connection	6mm Pipe		
Wall-mounted(1~2Channels)	ABS, Gray RAL7045	213x185x84mm	IP65
	Aluminum, Gray	230x200x157mm	IP65, Exd IICT4
Laboratory Desktop(1~2Channels)	Aluminum, Black	250x144x184mm	IP40
Portable(1~2Channels)	ABS, Yellow	420x325x180mm	IP67
19" Rack(1~6Channels)	Aluminum, natural-coloured	483x133x238mm	IP40
Explosion-proof	Exd IICT4 Controller optional		

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Note:

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