

TDLAS GAS ANALYZER GA9272

CO, CO₂, NH₃, H₂S, CH₄, H₂O, HCL, HF & Etc.

19" Rack Mount



Highlights:

- Designed based on Tunable Diode Laser Absorption Spectroscopy (TDLAS) technology
- Utilizes semiconductor lasers with extremely narrow linewidth and tunable frequency
- Enables highly accurate and selective gas measurements
- Laser frequency adjustable through working current control
- Lock-in amplifier for precise signal processing
- High-precision gas concentration calculation
- Employs single-line laser spectroscopy with compact, no moving parts or chopper, ensuring durability
- High mechanical stability and fast response
- Minimal maintenance required
- Automatic temperature and pressure compensation for accurate measurements in varying industrial and environmental conditions
- Allows real-time, accurate monitoring of process gas composition
- Supports combustion optimization and energy savings
- Prevents temperature drop in furnaces
- Eliminates risk of gas accumulation during startup and reduces explosion hazards
- Contributes to reducing environmental emissions

ویژگیها :

- طراحی شده بر پایه فناوری TDLAS Tunable Diode Laser Absorption Spectroscopy
- استفاده از لیزرهایی با پهنای طیفی بسیار باریک و قابلیت تنظیم فرکانس
- امکان اندازه‌گیری دقیق و گزینشی گازها
- تنظیم فرکانس لیزر از طریق کنترل جریان کاری
- استفاده از تقویت‌کننده قفل فاز (Lock-in Amplifier) برای پردازش سیگنال
- محاسبه غلظت گاز با دقت بالا
- بهره‌گیری از طیف‌سنجی تک‌خطی لیزری و بدون قطعه متحرک یا موتور چاپر
- پایداری مکانیکی بالا و پاسخ سریع
- نیاز حداقلی به سرویس و نگهداری
- سیستم تصحیح خودکار دما و فشار برای حفظ دقت اندازه‌گیری در شرایط صنعتی و محیطی
- امکان پایش برخط و دقیق ترکیب گازهای فرآیندی
- نقش مؤثر در بهینه‌سازی احتراق و کاهش مصرف انرژی
- جلوگیری از افت حرارتی کوره‌ها
- حذف احتمال انباشت گازهای خطرناک در هنگام راه‌اندازی و کاهش خطر انفجار
- کمک به کاهش انتشار آلاینده‌های زیست‌محیطی

Product Details:

Gas	min. range	max. range	Type of Sensor
CO	0 – 5000 ppm	0-100 Vol%	TDLAS ¹
	0 – 10000 ppm		
CO ₂	0 – 1000ppm	0 – 100 Vol%	TDLAS
CH ₄	0 – 100 ppm	0 – 30 Vol%	TDLAS
	0-1000ppm	Customizable	
H ₂ S	0-1000ppm	0-100%Vol	TDLAS
H ₂ O	Customizable	0-100%Vol	TDLAS
NH ₃	0-10000 ppm	Customizable	TDLAS
HF	0-100 ppm	Customizable	TDLAS
HCl	Customizable	Customizable	TDLAS

Notes:

1. Tunable Diode Laser Absorption Spectroscopy
2. The 0-100% range can be fully customized according to the application requirements.
3. The measurement of other gases is also customizable.

کاربردها :

- نصب در سیستم‌های آنالایزر برخط گاز در صنایع سیمان و فولاد
- پایش گازهای فرآیندی در دهانه کوره دوار
- بهینه سازی احتراق ثانویه در کلساینر
- پایش فرآیند و محافظت از فیلتر الکتروستاتیکی در پيش گرم کن
- کنترل فرآیند کارخانجات احیا مستقیم آهن
- اندازه گیری گاز در صنعت متالورژی و کنترل کیفیت محصول نهایی فولادی (نورد، قطعه سازی ، عملیات حرارتی)

Applications:

- Suitable to install in gas analyzer system of Cement, Steel plants
- Kiln inlet combustion control
- Calcination combustion control
- Prevent explosion of Electrostatic filters
- Process control DRI steel plans
- Metallurgy gas measurements (heat treatments of parts by gas)
- Any other application by request





Technical Information for GA92 V2

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Technical Data
of
TDLAS sensor

measuring principle	Tunable Diode Laser Absorption Spectroscopy (TDLAS)	Constant Temp.	50°C ±0.5°C
Range	Customizable	Linearity Error	≤±1% F.S
Resolution	0.1ppm/0.01%	Repeatability	≤1%
accuracy	±1%F.S.	Span drift	≤±1%F.S.
response time	≤30 s	Zero drift	≤±1%F.S.
Flow Rate	0.5–3 L/min	Maintenance cycle	≤2 times/year
Working / Operating Temp.	-10~50°C	warm-up time	20 s quick start < 10 min full specification
Humidity	0–98%RH	Output / Interface	RS-485 / RS-232/4-20mA
Voltage / Power	12V±10%, 24V DC	Storage Conditions	-40~85°C; 0–98%RH

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Technical Data
of
Other
Sensors



Cubic

Tunable diode laser absorption spectroscopy (TDLAS) for measure of gases CO, CO₂, CH₄, O₂, H₂S

Manufacturer
Cubic Instruments (Wuhan) Ltd.



Zetian

Tunable diode laser absorption spectroscopy (TDLAS) for measure of multiple gases (Customizable)

Manufacturer
Zetian Process and Environmental



Para. M

Paramagnetic Sensor Oxygen Measuring (PAROX 1200)

Range
0-100 Vol%, 0-25 Vol%, other ranges on request

min Range
0-50 % O₂

Repeatability
< ± 0,03 % O₂

Manufacturer
Angst + Pfister

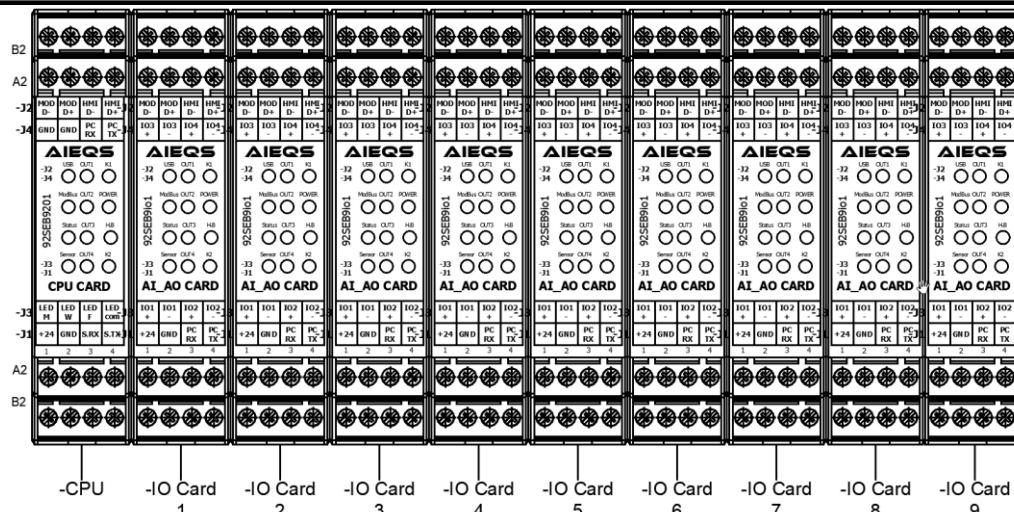
optional





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Power & I/O card Details



Standard IO Block configuration:

CPU Card1
CPU Card2
CPU Card3

Depends on the gas measuring add

-IO Card 1: 1st, 4...20 mA output
-IO Card 2: 2nd, 4...20 mA output

Maximum IO Block configuration (as order):

CPU Card

-IO Card 1: 1st, 4...20 mA output
-IO Card 2: 2nd, 4...20 mA output
-IO Card 3: 1st, Relay Card
-IO Card 4: 2nd, Relay Card
-IO Card 5: 1st, Opto-coupler output
-IO Card 6: 2nd, Opto-coupler output
-IO Card 7: 1st, Opto-coupler input
-IO Card 8: 2nd, Opto-coupler input
-IO Card 9: 1st, 4...20 mA input

Analyzer Supply Voltage

90 to 260 VAC (+10 %, -15 %),
switchable, 48 ... 62 Hz

Ambient temperature

+5 ... +45 °C

Storage temperature

-20 ... +70 °C

interface

RS-485 for Modbus
USB

CPU Card

Power Supply: 24 VDC
Serial Port 1: RS232 / 485 to sensor
Serial Port 2: 485 to HMI
Serial Port 3: USB to Laptop
LED indicators

2nd, 4...20 mA output Card

4 channels mA output 4 ... 20 mA, 500 Ω
Potential-free (electrically isolated)
Signal range: 0 ... 24 mA
Resolution/precision: 0.1 % (20 µA)

2nd, Relay output Card

4 relay outputs: 30 V AC/48 V DC
0,5 A; 1-pole changeover switch
3 connections
Max. switching current: 30 W (at 48 V DC/500 mA)

2nd, Opto-coupler output Card

4 Opto-coupler input
Switching range: 14 ... 42 V
Highest allowable voltage: ±50 V DC

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Gas connection

Swagelok 6 mm
Swagelok ¼"

Purge Gas connection

Swagelok 8 mm

1st, 4...20 mA output Card

4 channels mA output 4 ... 20 mA, 500 Ω
Live Zero 0/2/4 mA Configurable
Potential-free (electrically isolated)
Signal range: 0 ... 24 mA
Resolution/precision: 0.1 % (20 µA)

1st Relay output Card

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4 Opto-coupler input
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Highest allowable voltage: ±50 V DC

4...20 mA input

4 channels mA input 4 ... 20 mA
Potential-free (electrically isolated)
Highest allowable input signal 30 mA
Overload protection ±1000 mA
Input load 50 Ω

19" Rack mount enclosure Dimension

۴۲۰ x ۴۲۰ x ۱۷۰ mm, 4 unit of rack

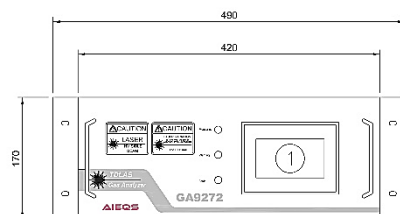
19" Rack mount enclosure weight

15-25 Kg

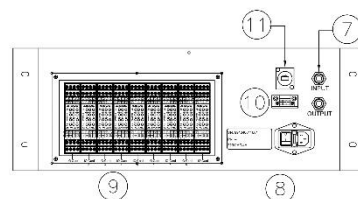


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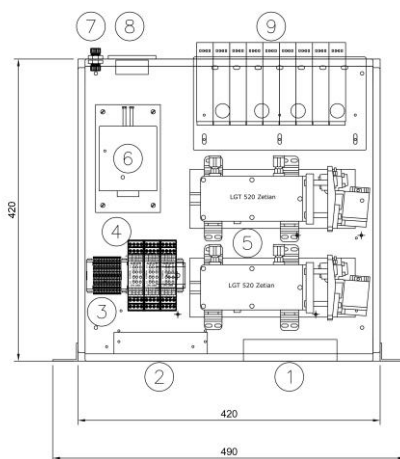
Dimensions



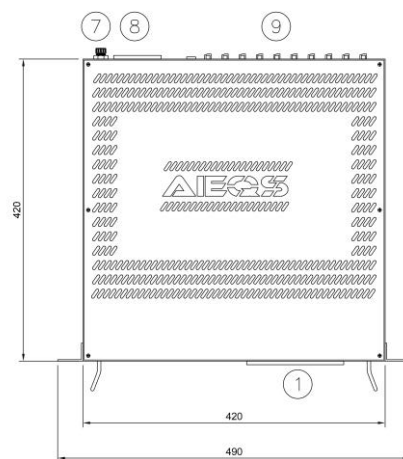
FRONT VIEW



BACK VIEW



INSIDE VIEW



TOP VIEW

- 1** Touch screen Display and LEDs for Status
- 2** Power Supply
- 3** Terminals
- 4** CPU Cards
- 5** TDLAS Sensors
- 6** Paramagnetic sensor(optional)
- 7** Gas inlet / outlet connections
- 8** Power Cable & Fuse
- 9** I/O cards Block
- 10** Signal socket
- 11** USB connection





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