



AIEQS

Arka Behbood Farayand (LLC)
Process Development

NDIR GAS ANALYZER GA9281

CO, CO₂, CH₄, C₃H₈, H₂O, O₂, NO, SO₂, H₂

Wall Mount



Highlights:

- multi-channel measuring NDIR sensor for up to 6 gases
- Paramagnetic and electro chemical cells connectable for (O₂, NO)
- no moving parts for zero abrasion and wear
- temperature and pressure compensation, reference channel for maximum precision
- energy saving & combustion control
- temperature control of burners and heaters
- process control and quality control
- explosion risk control
- reduce emission

ویژگیها :

- اندازه گیری همزمان تا 6 گاز بروش مادون قرمز
- استفاده از متدهای پارامگنتیک و الکتروشیمیایی جهت گاز های O₂, NO
- بدون موتور چاپر و قطعه متحرک
- دارای تصحیح فشار و دما برای مقادیر اندازه گیری
- بهینه سازی فرآیند احتراق و صرفه جویی در مصرف انرژی
- جلوگیری از افت دمایی کوره ها
- کنترل فرآیند و بهبود کیفیت تولید
- جلوگیری از انباشت گاز در زمان راه اندازی و کنترل خطر انفجار آن
- کاهش انتشار آلاینده های زیست محیطی

Product Details:

Gas	min. range	max. range	Type of Sensor
CO	0 – 5000 ppm	0 – 50 Vol%	NDIR ¹
CO ₂	0 – 100 ppm	0 – 100 Vol%	NDIR
CH ₄	0 – 5 Vol%	0 – 100 Vol%	NDIR
C ₃ H ₈	0 – 10000 ppm	0 – 50 Vol%	NDIR
SO ₂		0 – 2000 ppm	NDIR
NO		0 – 5000 ppm	NDIR
H ₂ O	0 – 100 % rel. / 0 – 6 % abs.		NDIR
O ₂	0 – 5 Vol%	0 – 100 Vol%	Paramagnetic ²
		0 – 25 Vol%	EC ³
NO		0 – 5000 ppm	EC
H ₂		0-100 Vol%	TCD ⁴

Notes:

1. None Dispersive Infra-Red method
2. Paramagnetic measuring cell
3. Electrochemical
4. Thermal Conductivity Detector
5. Life time 1-2 years depends on sample condition and concentration

کاربردها :

- نصب در سیستم های 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 پیش گرم کن
- کنترل فرآیند کارخانجات احیا مستقیم آهن
- اندازه گیری گاز در صنعت متالوژی 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 plants
- Metallurgy gas measurements (heat treatments of parts by gas)
- Any other application by request

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Technical Information for GA9281

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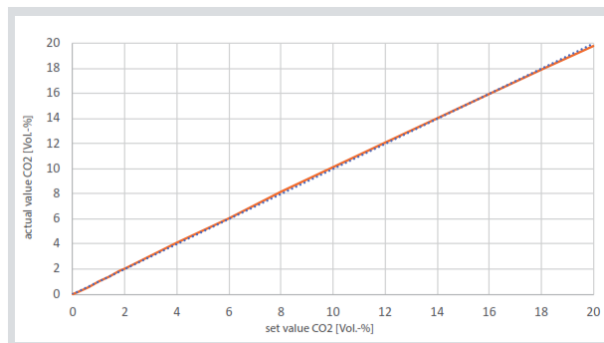
Technical Data of NDIR sensor

Measuring principle	non-dispersive infrared (NDIR)
max. NDIR channels	6
digital resolution	1 ppm
Linearity	± 0.1 % of MR
accuracy	± 2.0 % of MR
Zero-point drift	± 2.0 % of MR / 24 h
sensitivity drift	± 2.0 % of MR / week
pressure influence	± 0.1 % of MR / hPa
temp. influence	± 0.1 % of MR / K
ripple	± 0.1 % of MR
response time	T90 < 4 s

warm-up time	20 s quick start < 10 min full specification
dimensions	320 x 111 x 60 mm (L x W x H)
mass	0.8 kg
power supply	+ 15 V DC ... 25 V DC 150 mA @ 24 V DC
communication	RS232
analog output	0 ... 24 mA 4 ... 24 mA
Operating temp.	5 ... 45 °C
operating pressure	760 ... 1160 hPa
gas flow	20 ... 100 l/h max. flow difference ± 2 l/h
permissible gas pressure	20 ... 200 hPa gauge pressure
warm-up time	20 s quick start < 10 min full specification



NDIR 8000 sensor



Linearity of NDIR8000 V172

Measuring ranges:

- CO2 0 - 1,000 vppm
 - CO2 0 - 20,000 vppm
 - CO2 0 - 20 Vol.-%
- dynamic range switching

R²=0.9998





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Technical Data of Other Sensors



TCD Gas Sensor
TCD sensor for H2 Measuring

Range
0-100 Vol%
Can be customized on Request

Manufacturer
Cubic Instruments (Wuhan) Ltd.

TCD



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

Para. M



Oxygen Measuring Range
O2: 0 – 25 Vol%

NO Measuring Range
0 – 5000 ppm

NO Measuring Range
0 – 5000 ppm

Sensor life time
1-2 years depends on sample condition

Manufacturer
SAXON JUNKALOR GmbH

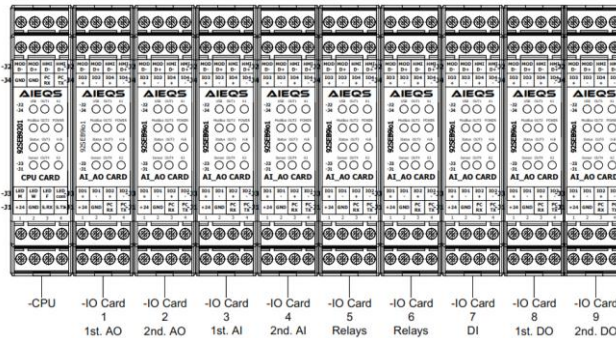
optional

EC

optional

3

Power & I/O card Details



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

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

Gas connection
Swagelok 6 mm
Swagelok 1/4"

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

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Wall mount enclosure Dimension
500x 500 x 240 mm

Wall mount enclosure weight
30-40 Kg

Standard Cards

- X2: 1st mA out card
- X10: mainboard card
- X11: Modbus RS 485 and USB output

optional cards as order

- X3: 2nd mA out card
 - X4: mA IN card
 - X5: 1st Relay out card
 - X6: 2nd Relay out card
 - X7: opto-coupler IN
 - X8: opto-coupler out
 - X9: optional pump control
- Relay output**
8 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)

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
RS232 USB



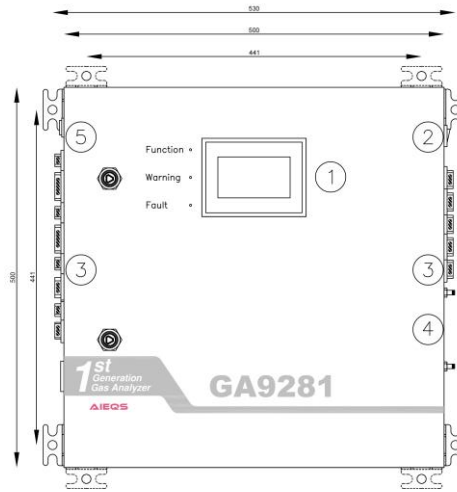


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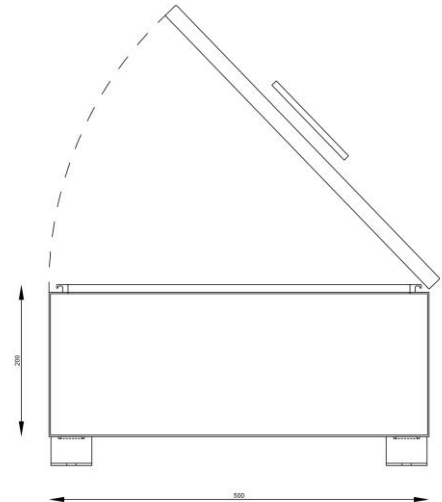
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Process Development

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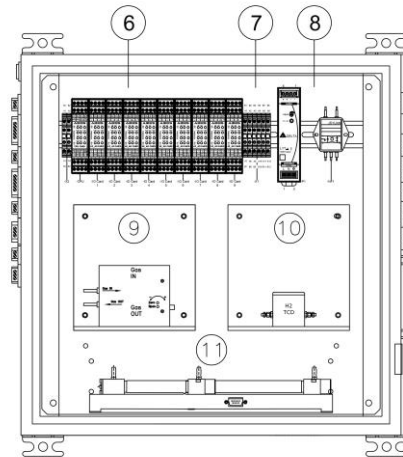
Dimensions



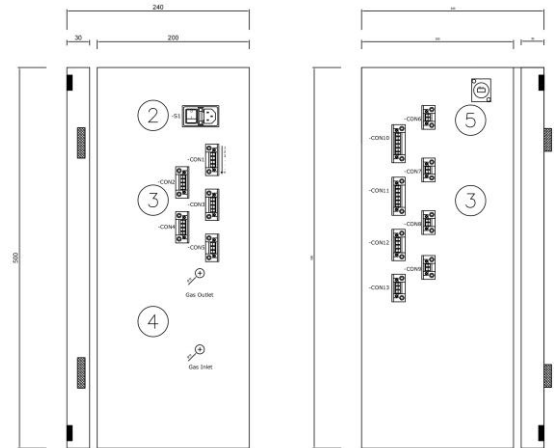
FRONT VIEW



TOP VIEW



INSIDE VIEW



SIDE VIEW

- 1** Touch screen Display and LEDs for Status
- 2** Power cable & Fuse
- 3** Power / signal Cable Socket
- 4** Gas inlet / outlet connections
- 5** USB Connection
- 6** I/O cards Block
- 7** Terminals
- 8** Power Supply
- 9** Paramagnetic sensor(optional)
- 10** EC / TCD sensors (optional)
- 11** NDIR sensor NDIR 8000

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