LGA-4000 (In-Situ Model)

Laser Online Gas Analysis System

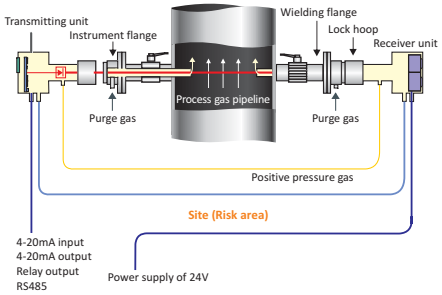
The Process Gas Analysis System of LGA-4000 series (In-Situ model), based on the technology of the diode laser absorption spectroscopy (DLAS), is the gas laser analysis system with integrated design and high integration. The system, by in-situ measurement that needs no sampling pretreatment, is able to rapidly, accurately and reliably measure various industrial process gases and flue gases emitted for environmental protection, to provide the best solution for the on-line gas monitoring in various industries.

Product Features

- Laser In-Situ measurement, rapid response, high measurement precision
- Integrated positive pressure explosion-proof design, safe and reliable
- Modular design, with the possibility to renew all functional modules on site, easy to maintain
- High intelligent degree, convenient for operation

System Composition

The transmitting unit of the Process Gas Laser Analysis System of LGA-4000 series (In-Situ model), consisting of the man-machine interface, the laser drive module, the central processing module, the diode laser and other modules, mainly realizes diode laser driving, spectral data processing, human-computer interaction and other functions. The receiver units, consisting of the photoelectric sensor, the signal processing module, the positive control module and other modules, mainly realizes signal processing, power control and other functions.



Technical Specifications

Technical indexes
Linearity error: ⩽±1%F.S.
Span drift: ⩽±1%F.S./half-year
Repeatability: ⩽±1%F.S.
Explosion-proof grade: Expxmd llC T5
Protection grade: IP65

Response time
Warm-up time: ⩽15Min
Response time: ⩽1s (T90)

Interface signals
Analog output: 2-path 4-20mA, isolation, maximum load of 750 ohm
Relay output: 3-path relays, 24V, 1A
Analog input: 2-path 4-20mA (used for temperature and pressure compensation)
Digital communication: RS485 (RS232 or GPRS optional)

Electrical characteristics
Power supply: 24V DC (18-36V DC), 220V AC may be selected
Power consumption: < 20W
EMC: IEC 61000-4-2 IEC 61000-4-4 IEC 61000-4-5
Electrical safety: IEC 61010-1

Operation conditions
Work environment temperature: -30°C~60°C
Storage temperature: -40°C~80°C
Purging gas: 0.3~0.8MPa industrial nitrogen or instrument air (99.99% purity for low range O_2)

Parameters of Measured Gases

gas	Detection limit	Measuring range
O_2	100 ppm	(0-1)%Vol., (0-100)%Vol.
CO	0.6 ppm	(0-60)ppm, (0-100)%Vol.
CO_2	1.4 ppm	(0-140)ppm,(0-100)%Vol.
H_2O	0.3 ppm	(0-30)ppm, (0-100)%Vol.
H_2S	20 ppm	(0-2000) ppm, (0-100)%Vol.
HF	0.02 ppm	(0-2)ppm, (0-10000) ppm
HCl	0.1 ppm	(0-10) ppm,(0-100)%Vol.
HCN	0.3 ppm	(0-30)ppm, (0-1)%Vol.
NH_3	0.2 ppm	(0-20) ppm, (0-100)%Vol.
CH_4	0.4 ppm	(0-40)ppm, (0-100)%Vol.
C_2H_2	0.1 ppm	(0-10) ppm, (0-100)%Vol.
C_2H_4	0.6 ppm	(0-60)ppm, (0-100)%Vol.
CH_3I	0.6 ppm	(0-60)ppm, (0-100)%Vol.

Notes: 1. Consult FPI for alternative gases and ranges
2. Detection limit refers to below conditions: 20°C, 1 atm, 1 meter optical path

LGA-4000 (Bypass Model)

Laser Online Gas Analysis System

The Process Gas Laser Analysis System of LGA-4000 series (Bypass model), the bypass process gas analysis product based on the technology of diode absorption spectroscopy (DLAS), is able to make on-line analysis on carious process gases with high dust or high pressure after the bypass treatment and is with such features as strong adaptability and high reliability.

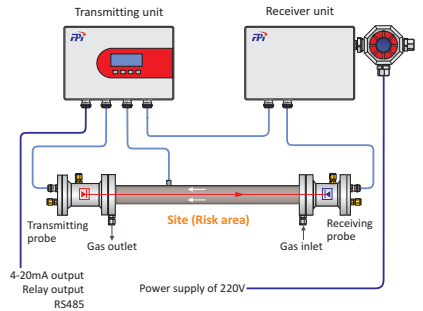
Product Features

- Laser bypass measurement, high measurement accuracy, strong anti-interference ability
- Optical non-contact detection, with the ability to direct measure gas with high temperature and strong corrosion
- Simple and reliable bypass treatment equipment, with the possibility to be directly installed at the process pipeline
- While system explosion-proof, supporting the automatic compensation of gas temperature and pressure

(Corrosion Resisting High Temperature Type Bypass Pipeline)

System Composition

The Process Gas Laser Analysis System of LGA-4000 series (Bypass model) consists of the transmitting unit, the receiver unit, the measurement gas chamber and others. The detecting laser, emitted by the transmitting probe, shall pass through the measurement gas chamber, shall be received by the optical sensor of the receiving probe and shall be transmitted to the transmitting unit to process and to display after the receiver unit making spectral analysis.



Technical Specifications

Technical indexes
Linearity error: ⩽±1%F.S.
Span drift: ⩽±1%F.S. /half-year
Repeatability: ⩽±1%F.S.
Explosion-proof grade: Expxmd ll Ct5
Protection grade: IP65

Response time
Warm-up time: ⩽15Min
Response time: ⩽5s (T90)

Interface signals
Analog output: 2-path 4-20mA, isolation, maximum load of 750 ohm
Relay output: 3-path relays, 24V, 1A
Digital communication: RS485 (RS232 or GPRS optional)

Electrical characteristics
Power supply: 100-240V AC/48-63Hz
Power consumption: < 15W (with no heat tracing)
EMC: IEC 61000-4-2 IEC 61000-4-4 IEC 61000-4-5
Electrical safety: IEC 61010-1
Fuse: 250V AC/1A

Sample gas's conditions
Sample gas's pressure: 0.5-3 bar (absolute pressure)
Sample gas's temperature: -30°C~140°C

Operation conditions
Work environment temperature: -30°C~60°C
Storage temperature: -40°C~80°C
Purging gas: 0.3~0.8MPa industrial nitrogen or instrument air (99.99% purity for low range O_2)

Parameters of Measured Gases

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CH_3I	0.6 ppm	(0-60)ppm, (0-100)%Vol.

Notes: 1. Consult FPI for alternative gases and ranges
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