

INFRARED GAS ANALYZER

DATA SHEET

ZFU

This infrared gas analyzer is of a single-beam type which has been developed by improving the gas analysis know-how hitherto accumulated.

It features a performance equal or superior to that of the preceding dual-beam type of gas analyzers in addition to easy maintenance and long-term stability. Therefore, the instrument is best suited to continuous measurement for combustion control in various types of industrial furnaces and studies of plants.

FEATURES

1. The infrared gas analyzer is prepared in two versions, a single-component analyzer and a dual-component analyzer.
2. Mass flow sensor featuring high reliability.
A mass flow sensor adopted as the detector features high reliability and long service life in addition to low noise level and excellent resistance to vibration.
3. Excellent long-term stability.
An improved type of optical system assures high stability especially for long-term analysis and less drift due to contamination on the sample cell.
4. Less interference due to concomitant gases.
Interference due to concomitant gases has been remarkably minimized by adopting a serial dual-layer type of transmission detector.
5. Easy maintenance.
The single-beam photometric system uses a sample cell only and eliminates the necessity of delicate adjustment for optical balance. The instrument is designed as a unit of simple construction featuring easy maintenance and checks.



ZFU1



ZFU2

SPECIFICATIONS

Measuring principle:

NDIR single beam method

Measurable gas components and measuring range:

Min. range

CO ; 0 to 500 ppm
CO₂ ; 0 to 500 ppm
CH₄ ; 0 to 1000 ppm

On the standard ranges, refer to "Code symbols"

Repeatability: L-range; ±0.5% of full scale
H-range; ±1% of full scale

Stability: Zero drift; ±1% of full scale/24H
Span drift; ±1% of full scale/24H

Noise: 0.5% of full scale

Ambient temperature: -5 to 45°C

Ambient humidity: Less than 90% RH

Response time (90% of final reading):
Electrical system; 2 sec, 3 sec, 5 sec
(Selectable with connector)
Response of actual gas; Within 15 sec
(Depending on cell length)

Indicator: 100 linear divisions

Output signal: OUTPUT 1; DC 0 to 1V
 OUTPUT 2; DC 0 to 10mV or DC 0 to 100mV or DC 0 to 1V or DC 4 to 20mA (Allowable load resistance 550Ω max.) (OUTPUT 1 and OUTPUT 2 available simultaneously)
 RANGE ID SIGNAL; Ia contact
 [Contact close at L-range
 Contact open at H-range]
 Contact capacity DC 30V, 0.2A
 (Resistance road)

Linearity: Better than ±2% of full scale
 (When linearizer is used)

Power supply: AC 115V ±10%, 60Hz
 AC 220V ±10%, 50Hz

Power consumption:
 Approx. 30VA

Materials of gas-contacting parts:
 Measuring cell; SUS304
 Window; CaF₂
 Piping; Polyethylene

Sample gas flow rate:
 1 l/min ±0.5 l/min

Sample gas temperature:
 0 to 50°C

Purging gas flow rate:
 1 l/min (To be flowed as occasion demands)

Warmup time: Approx. 2 hours

External dimensions:
 200 x 250 x 541 (H x W x D) mm

Weight: Approx. 11kg

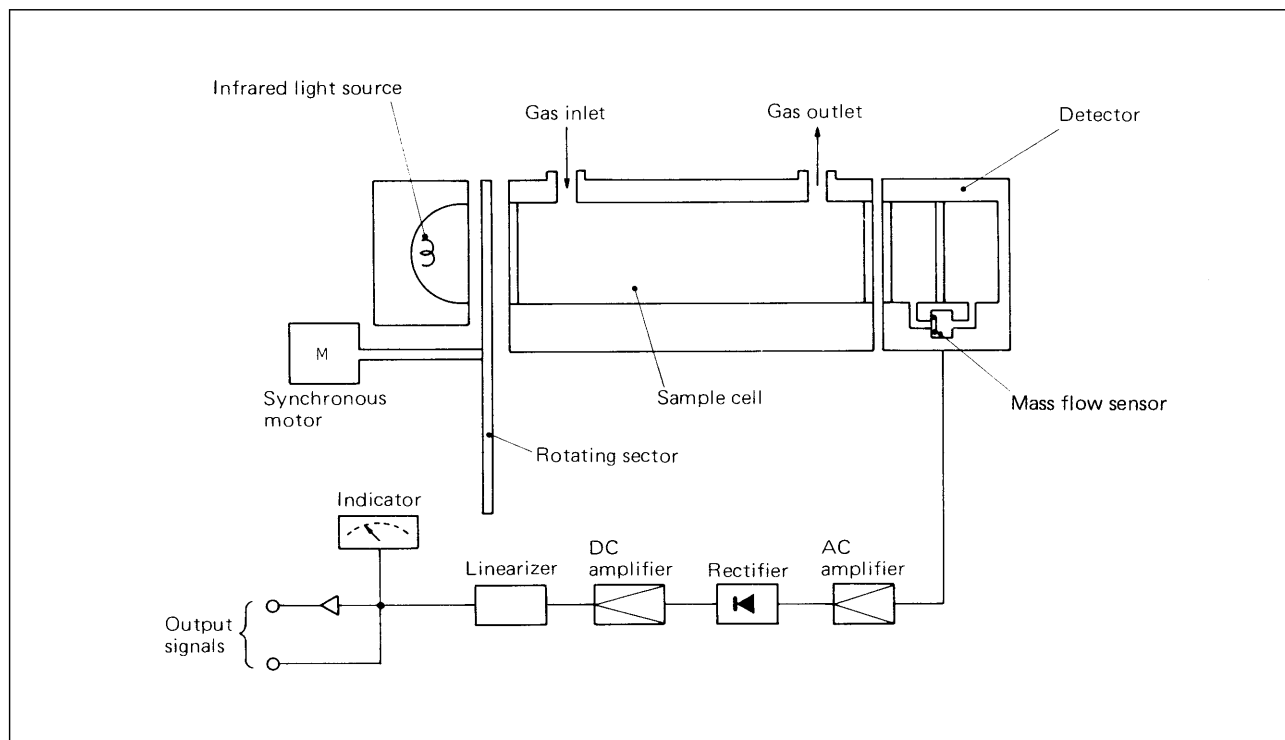
Finish color: MUNSELL N1.5

Site requirements:
 Installation site should be protected from direct sunlight or radiation from object kept at high temperature. For installing the instrument outdoors, a casing or cover should be prepared to protect it from direct wind or rain. Atmosphere must be clean at the installation site.

The instrument must not be exposed to corrosive or combustible gas, or subjected to severe external vibration.

Mounting: Panel mount with rear support

BASIC PRINCIPLE DIAGRAM



CODE SYMBOLS

(1) Single-component with dual range analyzer

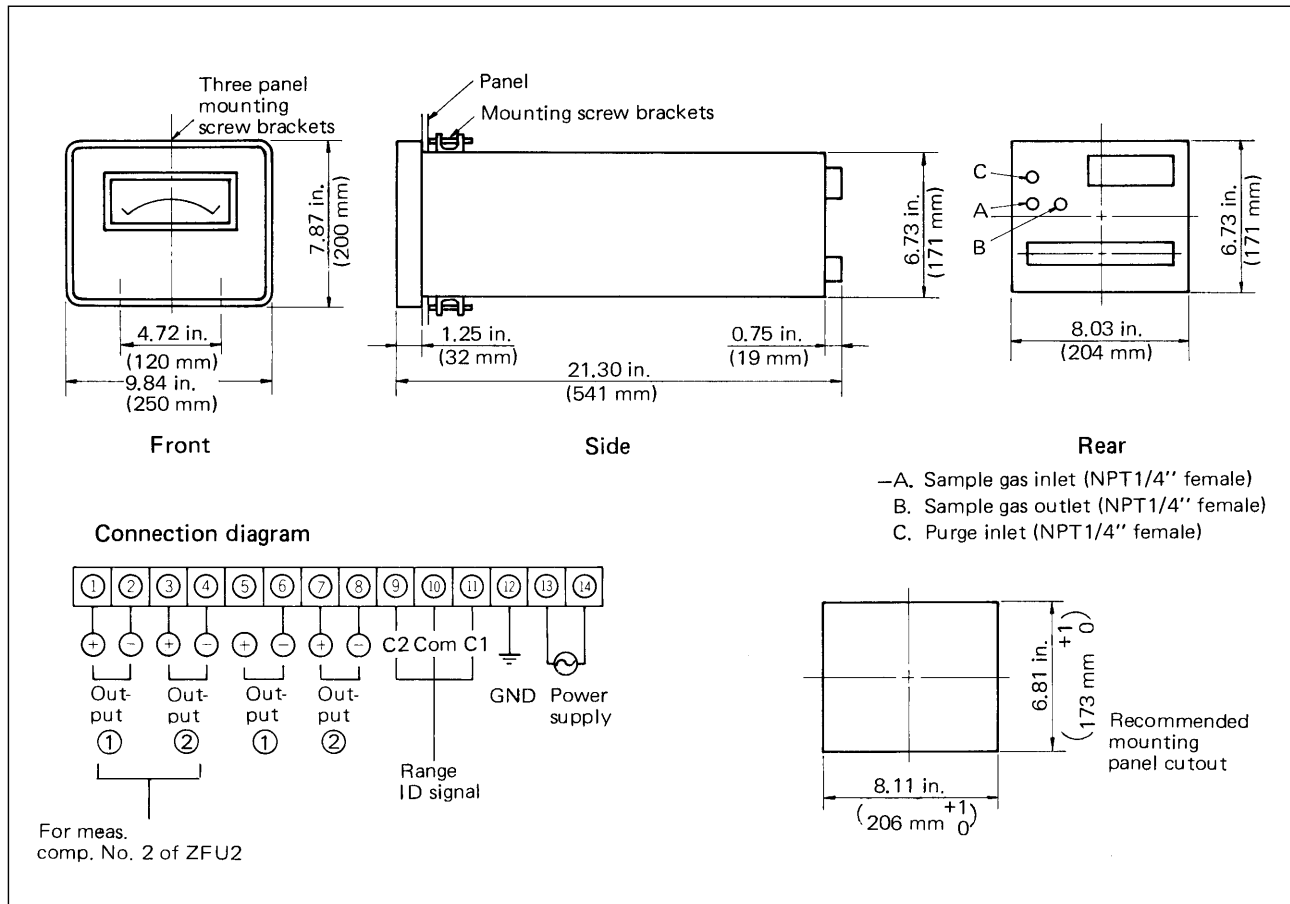
Z	F	U	1			3	-	8		Y	Y	Y	Description
			1										Number of measurable components
													1
													Measurable component
				B									CO
				D									CO ₂
				E									CH ₄
				Z									Others
													Measuring range
				E	2								0 to 0.05/0.1% Note
				F	2								0 to 0.1/0.2%
				G	2								0 to 0.2/0.5%
				H	2								0 to 0.5/1%
				J	2								0 to 1/2%
				K	2								0 to 2/5%
				L	2								0 to 5/10%
				M	2								0 to 10/20%
				Z	2								Others
													Output signal
								8					DC 0 to 1V/ DC 4 to 20mA, linear
													Power supply
									8				AC 115V, 60Hz
										3			AC 220V, 50Hz

Note 5th code "E" is not available.

(2) Dual component with single range analyzer

Z	F	U	2	1			3	-	8			8	Description
			2										Number of measurable components
													2
													Measurable components (comp. No. 1/comp. No. 2)
													CO ₂ /CO
													Measuring range (for component No. 1)
													0 to 20%
													Others
													Output signal (for component No. 1)
												8	DC 0 to 1V/DC 4 to 20mA, linear
													Power supply
												8	AC 115V, 60Hz
												3	AC 220V, 50Hz
													Output signal (for component No. 2)
													DC 0 to 1V/DC 4 to 20mA, linear
													Measuring range (for component No. 1)
													0 to 20%
													Others
													Output signal (for component No. 1)
													DC 0 to 1V/DC 4 to 20mA, linear
													Power supply
													AC 115V, 60Hz
													AC 220V, 50Hz
													Output signal (for component No. 2)
													DC 0 to 1V/DC 4 to 20mA, linear
													Measuring range (for component No. 1)
													0 to 20%
													Others
													Output signal (for component No. 1)
													DC 0 to 1V/DC 4 to 20mA, linear
													Power supply
													AC 115V, 60Hz
													AC 220V, 50Hz
													Output signal (for component No. 2)
													DC 0 to 1V/DC 4 to 20mA, linear
													Measuring range (for component No. 1)
													0 to 20%
													Others
													Output signal (for component No. 1)
													DC 0 to 1V/DC 4 to 20mA, linear
													Power supply
													AC 115V, 60Hz
													AC 220V, 50Hz
													Output signal (for component No. 2)
													DC 0 to 1V/DC 4 to 20mA, linear
													Measuring range (for component No. 1)
													0 to 20%
													Others
													Output signal (for component No. 1)
													DC 0 to 1V/DC 4 to 20mA, linear
													Power supply
													AC 115V, 60Hz
													AC 220V, 50Hz
													Output signal (for component No. 2)
													DC 0 to 1V/DC 4 to 20mA, linear

OUTLINE DIAGRAM (Unit: mm)



SCOPE OF DELIVERY

- 1 x gas analyzer main unit
- 1 x test report
- 1 x instruction manual
- 2 x power fuse
- 3 x panel mounting bracket

RELATED DEVICES

- Gas sampling device
- Accommodating locker
- Standard gas (for calibration)
- Receiving instrument

ORDERING INFORMATION

1. Measurable gas component(s) and measuring ranges.
2. Maximum, normal and minimum concentrations of sample gas as well as type and content (percent by volume) of concomitant gas.
3. Temperatures (maximum, normal and minimum), pressure and humidity of sample gas.
4. Dust conditions (mg/Nm³ or particle size, characteristics, etc.) and environmental conditions.
5. Necessity of calibrating standard gases (zero and span gases).
6. Types of output signals and necessity of linearizer.
7. Other items to be entered by customer on the specification sheet for the infrared gas analyzer.

⚠ Caution on Safety

*Before using this product, be sure to read its instruction manual in advance.

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