

NDIR GAS ANALYZER (3-COMPONENT ANALYZER)

DATA SHEET

This product is the replacement of our gas analyzer <model: ZRG>

This gas analyzer (ZKJK) is capable of measuring the concentrations of NO, SO₂, CO₂, CO, CH₄ and O₂ components in sample gas.

NO, SO₂, CO₂, CO, CH₄ are measured by non-dispersion infrared method (NDIR), while O₂ is measured by externalmount type zirconia method sensor. A maximum of three components including O₂ are simultaneously measurable.

The mass flow type twin detector of high sensitivity and reliability adopted in the infrared ray method detection block makes the measurement hardly affected by interfering components.

In addition, a microprocessor is built in and a large-size liquid crystal display is equipped for easier operation, higher accuracy and more functions.

Optimum as an analyzer unit of gas measurement system for combustion exhaust gas from refuse incinerator and boiler, or gas from different industrial furnaces.

Combination of this product and model sampling system (ZSU) is satisfied authentication test by measurement act.

FEATURES

1. Measure three components including O_2 simultaneously and continuously

Simultaneously and continuously measures up to three components out of NO, SO_2 , CO_2 , CO, CH_4 , plus O_2 , or up to totally three components.

- 2. Hardly affected by interference by other gases The mass flow type twin detector of high sensitivity and reliability adopted makes the measurement hardly affected by interfering components of other gas, ensuring a stable operation.
- 3. Equipped with abundant functions O_2 conversion, average value computation, automatic

calibration, one touch calibration, upper/lower limit alarm, remote measurement range changeover, range identification signal output, etc. incorporated can configure applications to match particular uses.

 Easy-to-see large LCD unit The large LCD unit adopted allows observing easily the indication of all measured components and computation values.

The interactive operation facilitates setting.

 Maximum range ratio is 1:25 Measuring ranges are changeable.

6. Drift +/-1% FS/week (more than 0 to 200ppm range)



SPECIFICATIONS

Standard Specifications

Principle of measurement:

NO, SO₂, CO₂, CO, CH₄;

- Non-dispersion infrared-ray absorption method
- Single light source and double beams (double-beam system)
- O₂ ; Exclusive zirconia O₂ sensor (externally installed). Model: ZFK7

Measurable gas components and measuring range:

| | Minimum range | Maximam range |
|---------------------------|---------------|---------------|
| NO | 0 – 100ppm | 0 – 5000ppm |
| SO ₂ | 0 – 100ppm | 0 – 10vol% |
| CO ₂ | 0 – 100ppm | 0 – 100vol% |
| СО | 0 – 100ppm | 0 – 100vol% |
| CH4 | 0 – 200ppm | 0 – 100vol% |
| O2 (External Zirconia) | 0 – 10vol% | 0 – 25vol% |

• Max. 3 components measurement including O₂.

• Measuring range ratio $\leq 1:5 (O_2 \text{ sensor})$

(except for O₂ sensor)

 Measuring ranges are changeable between the specified minimum and maximum range Settable one range or two ranges

*For measurable components and possible combinations of measuring ranges, refer to Tables 1-(1) to (3).

EDSX3-172 Date Nov. 11, 2022

ZKJK

| Measured value | indication: Digital indication in 4 digits (LCD with back light) | Enclosure: Material of gas-c | Steel casing, for indoor use ontacting parts: Gas inlet/outlet; Teflon |
|------------------------|---|--|--|
| | Instantaneous value of each component Instantaneous value after O₂ conversion (only in NO, SO₂, CO sensor with O₂ | | Sample cell; SUS304,chloroprene rubber Infrared-ray transmitting window; CaF2 O_2 sensor sample cell : SUS316 Internal piping; Toaron, Teflon |
| | sensor) • Average value after O ₂ conversion (only in NO, SO ₂ , CO sensor with O ₂ | Gas inlet/outlet: Purge gas flow ra | Rc ¹ /4 or ø6 hose end ate:1L/min (when required) |
| Analog output si | sensor) anals: | Standard Fur | nctions |
| , indiag output of | 4 to 20mA DC or 0 to 1V DC, | Output signal ho | lding: |
| | non-isolated output ; 7 points max. Analog output corresponds to mea- sured value indication in 1:1. | | Output signals are held during manual and auto calibrations by activation of holding (turning "ON" its setting). |
| | max.load 550Ω. for 4 to 20 mA DC min.load 100kΩ. for 0 to 1V DC * Refer to Table 2, for the channel No. of displayed values and analog output | | The values to be held are the ones just before start calibration mode or setting value. |
| | signals. | | It is selectable. Indication of instantaneous values will |
| Analog input sigi | • | | not be held. |
| | For signal input from externally installed | Remote output h | |
| | O ₂ sensor. Signal requirement: | - | Output signal is held at the latest value |
| | Signal requirement; (1) Signal from Fuji's Zirconia O ₂ sen- | | or setting value by short-circuiting the |
| | sor (TYPE: ZFK7) | | remote output holding input terminals. |
| | (2) 0 to 1V DC from an O_2 sensor | | Holding is maintained while the termi- nals are short-circuited. Indication of |
| | Input section is not isolated. | | instantaneous values will not be held. |
| | (Depend on O_2 input signal, measured concentration indication and O_2 conver- | Switch ranges : | |
| | sion.) | | The switch ranges is available in manu- |
| Relay contact ou | - | | al, auto, and remote modes. Only pre- set switch method is effective. |
| | 1a contact (250V AC/2A, resistive load) | Manual: | Allows range to switch by key operation. |
| | Instrument error, calibration error, | Auto: | Allows range to switch from low to high |
| | range identification, auto calibration status, pump ON/OFF. | | range when 90%FS or more is available |
| | solenoid valve drive signal for auto | | in the low range. |
| | calibration, auto calibration end. | | Allows range to switch from high to |
| | 1c contact (250V AC/2A, resistive load | | low range when 80%FS or less is avail- able in the low range. |
| | selectable 6 outputs) High/Low limit alarm contact output. | Remote: | No-voltage contact input (for measur- |
| | * All relay contacts are isolated mutually | | able components) |
| | and from the internal circuit. | | Allows range to switch via an external |
| Contact input: | No-voltage contact (ON/0V, OFF/5V DC, 5mA flowing at ON) * For ZRG (ON/5V, OFF/0V) | | signal when remote range switch input is received. When the contact input terminals for |
| | Remote range switch, auto calibra- | | each component are short-circuited, |
| | tion remote start, remote holding, | | the first range is selected, and it is |
| | average value reset. | | switched to the second range when the |
| | Isolated from the internal circuit with | Range identificat | terminals are open. |
| | photocoupler. Contact inputs are not isolated from one another. | Range identificat | The present measuring range is identi- |
| Power supply: | Voltage rating ; 100V to 240V AC | | fied by a contact signal. |
| | Allowable range; 85V to 264V AC | | The contact output terminals for each |
| | Frequency ; 50Hz/60Hz | | component are short-circuited when |
| Operating condit | Power consumption; 250VA max. | | the first range is selected, and when |
| Operating condit | Ambient temperature ; -5°C to 45°C | | the second range is selected, the ter- minals are open. |
| | Ambient humidity ; 90% RH max., | Auto calibration: | |
| | non-condensing | | Auto calibration is carried out periodi- |
| Storage condition | | | cally at the preset cycle. |
| | Ambient temperature; -20°C to 60°C Ambient humidity ; 95% RH max., | | When a standard gas cylinder for |
| | non-condensing | | calibration and a solenoid valve for opening/closing the gas flow line are |
| Dimensions (H x | • | | prepared externally by the customer, |
| | Analyzer main unit; | | calibration will be carried out with the |
| Maaa | 835 x 218 x 202mm | | solenoid valve drive contacts for zero |
| Mass: Finish color: | Approx. 16 kg Front panel; Off-white (Munsell 10Y7.5/0.5 | | calibration and each span calibration |

or equivalent)

turned on/off sequentially at the set

auto calibration timing.

Auto calibration cycle setting:

Auto calibration cycle is set.

Setting is variable within 1 to 99 hours (in increments of 1 hour) or 1 to 40 days (in increments of 1 day).

Gas flow time setting:

The time for flowing each calibration gas in auto calibration is set.

Settable within 60 to 900 seconds (in increments of 1 second)

Auto calibration remote start:

Auto calibration is carried out only once according to an external input signal. Calibration sequence is settable in the same way as the general auto calibration.

Auto calibration is started by opening the auto calibration remote start input terminals after short-circuiting for 1.5 seconds or longer.

Auto zero calibration:

Auto zero calibration is carried out periodically at the preset cycle.

This cycle is independent on "Auto calibradion" cycle.

When zero calibration gas and solenoid valve for opening/closing the calibration gas flow line are prepared externally by the customer, zero calibration will be carried out with the solenoid valve drive contact for zero calibration turned on/off at the set auto zero calibration timing.

Auto zero calibration cycle setting:

Auto zero calibration cycle is set. Setting is variable within 1 to 99 hours (in increments of 1 hour) or Setting is variable within 1 to 40 days (in increments of 1 day)

Gas flow time setting:

The timing for flowing zero gas in auto zero calibration is set. Settable 60 to 900 seconds (in increments of 1 second)

High/Low limit alarm:

Alarm contact output turns on when measurement value reach to the preset high or low limit alarm value. Contacts close when the channel value of each channel becomes larger than the high alarm limit value or smaller than the low alarm limit value.

Instrument error contact output:

Contacts close at occurrence of analyzer error No. 1, 3 or 10.

Calibration error contact output:

Contacts close at occurrence of manual or auto calibration error (any of errors No. 4 to 9).

Auto calibration status contact outputs:

Contacts close during auto calibration. Pump ON/OFF contact output:

During measurement, this contact close. While calibration gas is flowing, this contact open. This contact is connected in power supply of pump, and stop the sample gas while calibration gas flowing.

Average value reset:

Average value after O_2 conversion is started under preset condition by opening the average value reset input terminals after short-circuiting for 1.5 seconds or longer.

Reset is carried out by short-circuiting. Restart is carried out by opening.

Auto calibration interlocking function:

When these two products are lined up and installed, output the auto calibration synchronized signal to second product.

- Contact output during auto calibration: While auto calibration is carried out, this contact is closed.
- Auto calibration end contact output: Contact is closed for 1.5 seconds after finishing to flow the gas of auto calibration.

Optional Functions

O₂ conversion: Conversion of measured NO, SO₂ and CO gas concentrations into values at standard O₂ concentration

Conversion formula: $C = \frac{21-On}{21-Os} \times Cs$

- C : Sample gas concentration after O₂ conversion
- Cs: Measured concentration of sample gas
- Os: Measured O_2 concentration (Limit settable, 1 to 20% O_2)

On: Standard O₂ concentration (value changeable by setting; 0 to 19%O₂)

Average value after O₂ conversion :

The result of O_2 conversion or instantaneous O_2 value can be outputted as an average value in the preset period of time.

Used for averaging is the moving average method in which sampling is carried out at intervals of 30 seconds.

(Output is updated every 30 seconds. It is the average value in the determined period of time just before the latest updating.)

Averaging time is settable within 1 to 59 minutes (in increments of 1 minute) or 1 to 4 hours (in increments of 1 hour).

Communication function:

RS-232C (9pins D-sub)

Half-duplex bit serial

- Start-stop synchronization
- Modbus[™] protcol

Contents: Read/Wright parameters Read measurement concen-

- tration and instrument status
- Remark: When connecting via RS-485 interface, a RS-232C ↔ RS-485 converter should be used.

ZKJK

| Performance Repeatability Linearity Zero drift Span drift Response time (for 90% FS respo | ±0.5% of full scale ±1% of full scale ±1% of full scale/week (±2% of full scale/week; range be tween 0 to 100ppm and 0 to 200ppm) ±2% of full scale/week onse) 15 sec electrical response Within 60 seconds including replace- ment time of sampling gas (when gas flow rate is 0.5L/min) Gas replacement time depends on the number of measuring components and measuring range |
|---|--|
| Otand J.D. | |
| Standard Rec | uirements for Sample Gas |
| Flow rate | : 0.5L / min ±0.2L / min |
| Temperature | : 0 to 50°C |
| Pressure | : 10 kPa or less (Gas outlet side should be open to the atmospheric air.) |
| Dust | : $100 \mu g/Nm^3$ or less in particle size of |
| Duot | 1μm or less |
| Mist | : Unallowable |
| Moisture | : Below a level where saturation occurs |
| | at 2°C (condensation unallowable). |
| Corrosive compor | |
| o | 1 ppm or less |
| Standard gas for | |
| | Zero gas ; Dry N ₂ |
| | Span gas ; Each sample gas having concentration 90 to 100% |
| | of its measuring component |
| | range (recommended). |
| | Gas beyond concentration |
| | 100%FS is unusable. |
| | In case a zirconia O ₂ analyzer is in- |
| | stalled externally and calibration is |
| | carried out on the same calibration gas |
| | line: |
| | Zero gas ; Dry air or atmospheric air |
| | (provided without CO ₂ sen- |
| | sor) |
| | Span gas ; Except O ₂ measurement, each sample gas having |
| | concentration 90 to 100% |
| | of its measuring range. For |
| | O_2 sensor, O_2 gas of 1 to |
| | 2vol%. |
| | |
| | |
| | |

Installation Requirements

 Indoor use. (Select a place where the equipment does not receive direct sunshine, draft/rain or radiation from hot substances. If such a place cannot be found, a roof or cover should be prepared for protection.)

•Avoide a place where receives heavy vibration

• Select a place where atmospheric air is clean

ZRG ↔ ZKJK differences

| | ZRG | ZKJK |
|---------------------------|---|---|
| Contact input | DC5V | No-voltage contact |
| Zirconia O2 analyzer | ZFK3, 4 | ZFK7 |
| Average value | Calculation is always carried out even during holding. | Calculation is suspended during holding |
| Calibration error contact | Auto calibration status error | Calibration status error (Auto/manual) |

Principle diagram of NDIR type measurement (For NO, SO₂, CO₂, CO)



Example configuration of gas sampling system

The following illustrates a typical system configuration for five component gas measurement for monitoring combustion exhaust gas from boiler, refuse incinerator, etc.

Contact FUJI ELECTRIC for system configuration matching the particular use or further information.

In the case infrared gas analyzer (Model: ZRG) is replaced, Ziruconia O2 sensor should also be replaced.



- Functions of Individual Components
- (1) Gas extractor: Gas extractor with a heating type stainless steel filter of standard mesh 40μm
- (2) Mist filter: For separation of drain and removal of dust and mist
- (3) Safety drain trap:

Prevention of drain from being sucked and composite operation of constantpressure bubbler

(4) Gas aspirator: For aspiration of sample gas (sample gas flow rate approx. 2L/min)

(5) Electronic gas cooler:

- Dries the moisture in sample gas to a dew point of approx. 3°C.
- (6) Solenoid valve:Used for introducing calibration gas.
- (7) Membrane filter:

PTFE filter used to eliminate fine dust particles and permit monitoring of dust adhering condition on the front panel of the gas analyzer.

| (8) Flowmeter: | Adjusts and monitors the flow rate of sample gas. |
|--------------------------------|---|
| (9) Standard gas: | Reference gas used for calibrating zero and span of the analyzer. |
| (10)Zirconia O ₂ se | ensor: |
| | External zirconia oxygen sensor used for measuring the oxygen concentration (0 to 25%) in sample gas. In the case ZFK3-4 is used, ZFK7 should also be replaced. |
| (11)Converter: | Added to NOx analyzer. A special catalyst material for efficient conversion of NO_2 gas to NO is used. |
| *(Note) | For each gas sampling device, refer to the sepa- rate Data Sheet for each gas sampling device. |

CODE SYMBOLS

| Digit Description note Ziki jk jk </th <th></th> <th></th> <th></th> <th></th> <th>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 - Digit I</th> <th></th> | | | | | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 - Digit I | |
|--|-------|--|---------------------|-----------|---|----|
| Replacement of ZRG type K | Digit | | ription | note | ZKJK 5-Y of coc | le |
| 6 descurble component (NO, SO, CO, CH,)> Tat component NO 2nd component NO P | 4 | | | | | |
| It component 2nd component NO SO, CO, SO, CO, SO, CO, SO, CO, SO, CO, SO, CO, CO Mane None Mone None Mone None Cosa inferomal Infection note 1 Redition code> I Redi | 5 | Measurable component (N | | | | |
| NO NO SO, CO, CO, CO, CO, CO, CO, CO, CO, CO, C | 5 | | 2nd component | - | | |
| SO: CO: CO SO: CO SO: CO B | | | | _ | p | |
| CO- CO- CO- CO- CO- CO- CO- CO- CO- CO- | | | | | | |
| 6 Addasurable component (Dc)> note 1 Y < | | | | | | |
| 6 Addasurable component (Dc)> note 1 Y < | | | | | B | |
| 6 Addasurable component (Dc)> note 1 Y < | | | | | | |
| 6 Addasurable component (Dc)> note 1 Y < | | | | | | |
| 6 Addasurable component (Dc)> note 1 Y < | | | CO | | | |
| None Y | 6 | Others |)_)> | noto 1 | | |
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| 8 Revision code> Image: set of the set | | | - 4) | | | |
| 9 - | 0 | | etj | _ | | |
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| 0-2000ppm G G H 0-5000ppm J H H 0-1% J K H 0-2% K L H 0-5% L H H 0-10% M H H 0-20% N H H 0-100% N P H 0-100% R Z H 0-100% None Z H 0-100% None Z H 0-100ppm D D H H 0-100ppm D D H H 0-200ppm D D H H 0-200ppm D D H H 0-200ppm D H H H 0-200ppm H H H H 0-100ppm H H H H 0-100ppm H H H H 0-1% H H H H 0-1% | | | | | | |
| 0-5000ppm H J 0-1% J 0-2% K 0-10% L 0-20% M 0-20% N 0-50% P 0-100% R 0-100% Z 0-100% R 0-100% Z 0-100% Z 0-100% Z 0-100% Z 0-100% Z 0-100ppm B 0-200ppm C 0-2000ppm C 0-1000ppm G 0-1% J 0-2% K 0-2% N 0-20% N 0-20% N 0-20% N 0-100% N | | | | | | |
| 0-1% J 0-2% K 0-5% L 0-10% M 0-20% N 0-10% R 0-10% R 0-10% R 0-10% R 0-10% R 0-10% D 0-10% R 0-10% R 0-10% Z 0-100% D 0-100pm B 0-200ppm D 0-200ppm C 0-200ppm C 0-2000ppm F 0-2000ppm F 0-2000ppm H 0-10% K 0-2% L 0-10% R 0-20% P 0-10% R | | | | | | |
| 0-2% K K I I 0-5% L L I I 0-10% N N I I 0-20% N N I I 0-100% P I I I 0-100% R Z I I 0-100% R Z I I 0-100% R Z I I 13< | | | | | | |
| 0.5% L 0.10% M 0.20% N 0.50% P 0.100% P 0.100% Z 13 None 0.200pm Z 0.100ppm B 0.200ppm C 0.250ppm D 0.500ppm F 0.200ppm F 0.200ppm G 0.200ppm F 0.200ppm F 0.200ppm K 0.200ppm K 0.200ppm G 0.200ppm H 0.200ppm K 0.200ppm K 0.200ppm K 0.20% K 0.20% N 0.10% | | 0-2% | | | | |
| 0-20% N <td> </td> <td>0-5%</td> <td></td> <td></td> <td></td> <td></td> | | 0-5% | | | | |
| 0-50% 0-100% Others P P 13 <measuring range=""> 2nd component.1st range None note 3 Y 0-100ppm B Y V 0-200ppm C C 0-250ppm D C 0-3000ppm C C 0-1000ppm F C 0-2000ppm C C 0-3000ppm C C 0-2000ppm C C 0-2000ppm C C 0-2000ppm C C 0-2000ppm C C 0-1000ppm C C 0-10% K L 0-2% C K 0-20% K L 0-20% P C 0-100% R N</measuring> | | | | | | |
| 0-100% Others R Z R Z Z I III 13 <measuring range=""> 2nd component.1st range None note 3 Y IIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII</measuring> | | | | | | |
| Others Z <td> </td> <td></td> <td></td> <td></td> <td>I I I I I I I I I I I I I I I I I I I</td> <td></td> | | | | | I I I I I I I I I I I I I I I I I I I | |
| 13 <measuring range=""> 2nd component.1st range note 3 None 0-100ppm P 0-200ppm C C 0-250ppm D C 0-500ppm D C 0-1000ppm F C 0-2000ppm F C 0-2000ppm G C 0-2000ppm H J 0-2000ppm K J 0-5000ppm K L 0-5000ppm K L 0-5000ppm M J 0-5000ppm N N 0-5000ppm N N 0-50% L N 0-50% N N 0-20% N N 0-50% R N</measuring> | | | | | | |
| None Y 0-100ppm B 0-200ppm C 0-250ppm D 0-500ppm E 0-1000ppm F 0-2000ppm G 0-2000ppm H 0-2000ppm J 0-5000ppm J 0-5000ppm J 0-5000ppm K 0-5000ppm J 0-5000ppm M 0-5000ppm M 0-5000ppm M 0-20% N 0-20% P 0-20% R 0-50% P 0-100% R | 13 | | mponent 1st range | note ? | | |
| 0-100ppm B C 0-200ppm D C 0-250ppm D D 0-500ppm E C 0-1000ppm F C 0-2000ppm G C 0-2000ppm G C 0-5000ppm H C 0-10% J C 0-2% L C 0-10% N C 0-20% N P 0-20% R C | 1.5 | | inponent. Ist lange | note 5 | | |
| 0-200ppm C 0-250ppm D 0-500ppm E 0-1000ppm F 0-2000ppm G 0-2000ppm H 0-10% J 0-2% L 0-10% M 0-20% N 0-20% R | | | | | | |
| 0-250ppm D 0-500ppm E 0-1000ppm F 0-2000ppm G 0-5000ppm H 0-10% J 0-2% L 0-10% M 0-20% N 0-20% R | | 0-200ppm | | | | |
| 0-1000ppm F 0-2000ppm G 0-5000ppm H 0-1% J 0-2% K 0-5% L 0-10% M 0-20% N 0-20% N 0-20% R | | 0-250ppm | | | | |
| 0-2000ppm 0-5000ppm 0-1% 0-2% 0-2% 0-5% 0-10% 0-20% 0-20% 0-20% 0-20% 0-20% 0-20% 0-50% 0-100% R | | | | | | |
| 0-5000ppm 0-1% 0-2% 0-5% 0-5% 0-10% 0-20% 0- | | | | | [| |
| 0-1% 0-2% 0-5% 0-10% 0-20% 0-20% 0-20% 0-20% 0-20% 0-20% 0-20% 0-20% R | | U-2000ppm | | | | |
| 0-2% 0-5% 0-10% 0-20% 0-20% 0-50% 0-50% 0-100% R | | 0-3000ppm | | | | |
| 0-5% L 0-10% M 0-20% N 0-50% P 0-100% R | | 0-2% | | | | |
| 0-10% 0-20% 0-50% 0-100% M N P P R | | 0-5% | | | | |
| 0-20% N 0-50% P 0-100% R | | 0-10% | | | ┃ | |
| 0-50% 0-100% | | 0-20% | | | | |
| | | 0-50% | | | | |
| Others Z | | | | | | |
| | | Others | | | | |

| | | | <u>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23</u> - Digit No. |
|-------|---|----------|--|
| Digit | Description | note | ZKJK 5-Y of code |
| 14 | <measuring range=""> 2nd component.2nd range</measuring> | note 3 | |
| | None | | Y : : : : : : : : : : |
| | 0-200ppm | | |
| | 0-250ppm | | |
| | 0-500ppm | | |
| | 0-1000ppm | | |
| | 0-2000ppm | | G |
| | 0-5000ppm | | |
| | 0-1% | | |
| | 0-2% | | K |
| | 0-5% | | |
| | 0-10% | | |
| | 0-20% | | |
| | 0-50% | | |
| | 0-100% | | |
| | Others | | |
| 15 | - | | YY |
| 16 | | | |
| 17 | - | | YY |
| 18 | 10 | | |
| 19 | <o2 range="" sensor=""> None</o2> | mata 4.0 | YY |
| 20 | 0-10%/0-25% | note 4,8 | |
| | 0-25% | | |
| | Others | | |
| 21 | <pre>Output></pre> | | |
| 21 | 4 to 20mA DC | | |
| | 0 to 1V DC | | |
| | 4 to 20mA DC + communication function | | B |
| | 0 to 1V DC + communication function | | |
| 22 | $ conversion>$ | note 5 | |
| 22 | None | note 6 | Y |
| | With O ₂ conversion output | | |
| 23 | <pre></pre> <pre><</pre> | | |
| 23 | For combustion exhaust gas | | в |
| | Others | note 7 | Z |
| | | | L L |

Note 1 a) when "B" is specified at the 6th digit, O₂ sensor signal should be set as 0-1VDC linear corresponding to full scale. b) External zirconia O₂ sensor and external O₂ analyzer are not included in the scope of supply.

Note 2 When two products are lined up and installed, please refer to the corresponding table for measured value to specify the digit for second product. (Please also refer to note 9)

Note 3 Please refer to the appendix, for possible combination of measuring components and range in the data sheet.

Note 4 When "Y", "D" is specified at the 6th digit, Only "YY" should be selected.

Note 5 Only measuring value of NO, SO₂, CO are calculated as O₂ calculation, O₂ converted average value are outputted at the same time.

Note 6 When "Y" is specified at the 6th digit, Only "Y" should be selected.

Note 7 When "Z" is specified at the 23rd digit, gas composition table of actual measured gas has to be sent to Fuji with your purchase order.

Note 8 Precaution to observe when performing installation of two analyzers with external O2 analyzer.

• When two ZKJK are lined up side by side and installed with external O_2 analyzer, Be sure to observe connection of external O_2 analyzer shown following diagram on the right side. (with converted value/converted average value) In this case O_2 indication can not be conducted with second ZKJK (due to limitation of measurement)

Please refer to "Connecting method/analog output component" for connection to the terminal.



*First analyzer: This analyzer is connected to O_2 signal directly and indicate O_2 indication. Second analyzer: This analyzer is connected to O_2 instantaneous value from first analyzer and could not indicate O_2 indication.

• O2 range is 0-25% or 0-10%/25%.

• With these connection component for second analyzer should be NO sensor, SO₂ sensor or NO/SO₂ sensor. Please refer to the "correspondence table for measured value" "Code symbols" for details.

• When ZRG is replaced, two analyzers should be replaced at the same time.

Table 1. Measurable component and range - availability check table -

(*) Range code shows settable combination of the maximum range rate.

(1) Single component analyzer (NO, SO₂, CO₂, CO, CH₄)

 $\label{eq:scalar} \And: \mathsf{NO} \mbox{ Measuring range } \qquad \square: \mathsf{SO}_2 \mbox{ Measuring range } \qquad \bigcirc: \mathsf{CO}_2 \mbox{ Measuring range }$

 \bigcirc : CO Measuring range

 \triangle : CH₄ Measuring range

| \square | 2st range | С | D | E | F | G | Н | J | K | L | М | N | Р | R |
|-----------|-------------|--------|--------|--------|-------|---------|---------|--------|--------|------|---------|------------|------------|----------|
| | | 0~ | 0~ | 0~ | 0~ | 0~ | 0~ | 0~1% | 0~2% | 0~5% | 0 ~ 10% | 0 ~ 20% | 0~50% | 0 ~ 100% |
| | | 200ppm | 250ppm | 500ppm | | 2000ppm | 5000ppm | | | | | | | |
| | | ☆□00 | ☆□00 | ☆□00 | ☆□00 | ☆□00 | | | | | | | | |
| С | 0 ~ 200ppm | | ☆□00△ | ☆□00△ | ☆□00△ | ☆□00△ | ☆□00△ | | | | | | | |
| D | 0 ~ 250ppm | | | ☆□00△ | ☆□00△ | ☆□00△ | ☆□00△ | | | | | | | |
| Е | 0 ~ 500ppm | | | | ☆□00△ | ☆□00△ | ☆□00△ | \Box | | | | | | |
| F | 0 ~ 1000ppm | | | | | ☆□00△ | ☆□@0△ | \Box | \Box | | | | | |
| G | 0 ~ 2000ppm | | | | | | ☆□@0∆ | \Box | \Box | | | | | |
| Н | 0 ~ 5000ppm | | | | | | | \Box | \Box | | | | | |
| J | 0~1% | | | | | | | | | | | 00Δ | | |
| K | 0~2% | | | | | | | | | | | 00Δ | 00Δ | |
| L | 0~5% | | | | | | | | | | | 00Δ | 00Δ | 004 |
| М | 0 ~ 10% | | | | | | | | | | | OOA | OOA | 004 |
| Ν | 0~20% | | | | | | | | | | | | 00Δ | 004 |
| Р | 0~50% | | | | | | | | | | | | | 004 |
| R | 0~100% | | | | | | | | | | | | | |

(2) Double-component analyzer (NO/SO₂)

 \bigcirc : Double-component analyzer Measuring range (1st range)

| | SO ₂ | | С | D | E | F | G | Н |
|----|-----------------|--------|--------|------------|--------|---------|---------|---------|
| | | 0~ | 0~ | 0. 250mmm | 0~ | 0~ | 0~ | 0~ |
| NO | | 100ppm | 200ppm | 0 ~ 250ppm | 500ppm | 1000ppm | 2000ppm | 5000ppm |
| В | 0 ~ 100ppm | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| С | 0 ~ 200ppm | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| D | 0 ~ 250ppm | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | 0 ~ 500ppm | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| F | 0 ~ 1000ppm | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G | 0 ~ 2000ppm | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

* 2nd range: Max. NO (0-200ppm), SO₂ (0-5000ppm), Selectable range up to 25 times of 1st. range

(3) Double-component analyzer (CO₂/CO)

 $\textcircled{1}{\sim}\textcircled{5}$: Double-component analyzer Measuring range (1st range)

| \smallsetminus | CO | В | С | D | E | F | G | Н | J | K | L | М | N | Р | R |
|------------------|-------------|--------|--------|--------|--------|---------|---------|---------|------|------|------|---------|---------|---------|----------|
| | | 0~ | 0~ | 0~ | 0~ | 0~ | 0~ | 0~ | 0~1% | 0.0% | 0~5% | 0.100/ | 0. 20% | 0. 50% | 0. 1000/ |
| CO ₂ | | 100ppm | 200ppm | 250ppm | 500ppm | 1000ppm | 2000ppm | 5000ppm | 0~1% | 0~2% | 0~5% | 0 ~ 10% | 0 ~ 20% | 0 ~ 50% | 0~100% |
| В | 0 ~ 100ppm | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| С | 0 ~ 200ppm | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| D | 0 ~ 250ppm | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| E | 0 ~ 500ppm | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| F | 0 ~ 1000ppm | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| G | 0 ~ 2000ppm | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| Н | 0 ~ 5000ppm | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | | | | |
| J | 0~1% | | | | | | | | 3 | (4) | (4) | | | | |
| K | 0~2% | | | | | | | | 3 | (4) | (4) | | | | |
| L | 0~5% | | | | | | | | 3 | (4) | (4) | | | | |
| М | 0 ~ 10% | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | | | 5 | 5 | 5 | 5 |
| Ν | 0 ~ 20% | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | | | 5 | 5 | 5 | 5 |
| Р | 0 ~ 50% | | | | | | | | | | | 5 | 5 | 5 | 5 |
| R | 0 ~ 100% | | | | | | | | | | | 5 | 5 | 5 | 5 |

 * Max. measuring range as 2nd range is following. Selectable range up to 25 times of 1st range.

① : CO (0-5000ppm), CO₂ (0-5000ppm)

② : CO (0-5000ppm), CO₂ (0-20%)

5 : CO (0-100%), CO₂ (0-100%)

③: CO (0-50%), CO₂ (0-20%)

4 : Selectable range up to 25 times.

OUTLINE DIAGRAM (Unit: mm)

<Analyzer main unit>





<Mounting size>



M10 screw is needed formounting to main unit



EXTERNAL CONNECTION DIAGRAM







- *) Do not use the terminal for relay.**) When two analyzers are lined up
- when two analyzers are inted up and installed with O₂ converted value and converted average value, by First analyzer O₂ instantaneous value (0-1V DC: 0-25% range equivalent) is outputted.
- ***) When two analyzers are lined up and installed and first analyzer is used as CO₂/CO sensor, CO converted value is outputted to 1st component O₂ converted value output.

Connector <CN2> For serial communication

| | \sim | | |
|---|------------------------|---------------|---|
| 1 | $ 0\rangle$ | | 6 |
| 2 | $\left \right\rangle$ | \mathcal{I} | 0 |
| 3 | | ЗI | 7 |
| 3 | | Эl | 8 |
| 4 | O | 2 | 9 |
| 5 | $\left \right\rangle$ | \mathcal{I} | 3 |
| | | | |

Connecting method/analog output component

Measurment of NO/SO₂/CO/O₂ sensor [Example connection] (with converted value and converted average value)



 $\label{eq:measurement} \begin{array}{l} \mbox{Measurement} of NO/SO_2/CO_2CO/O_2 \mbox{ sensor [Example connection]} \\ \mbox{(with converted value and converted average value)} \end{array}$



Table 2. Correspondence between measurement channels and measured value

The following table gives measurement channels and their contents according to the code symbols.

| Co | ode symb | ol | | | | | | |
|-----------|-----------|------------|--|--|--|--|--|--|
| 5th digit | 6th digit | 22nd digit | Contents | | | | | |
| Р | Y | Y | Ch1: NO | | | | | |
| A | Y | Y | Ch1: SO ₂ | | | | | |
| D | Y | Y | Ch1: CO ₂ | | | | | |
| В | Y | Υ | Ch1: CO | | | | | |
| E | Y | Y | Ch1: CH ₄ | | | | | |
| F | Y | Υ | Ch1: NO, Ch2: SO ₂ | | | | | |
| G | Y | Υ | Ch1: CO ₂ , Ch2: CO | | | | | |
| Р | A, B | Y | Ch1: NO, Ch2: O ₂ | | | | | |
| A | A, B | Y | Ch1: SO ₂ , Ch2: O ₂ | | | | | |
| D | A, B | Y | Ch1: CO ₂ , Ch2: O ₂ | | | | | |
| В | А, В | Y | Ch1: CO, Ch2: O ₂ | | | | | |
| E | A, B | Υ | Ch1: CH ₄ , Ch2: O ₂ | | | | | |
| F | A, B | Y | Ch1: NO, Ch2: SO ₂ , Ch3: O ₂ | | | | | |
| G | A, B | Υ | Ch1: CO ₂ , Ch2: CO, Ch3: O ₂ | | | | | |
| Р | A, B | А | Ch1: NO, Ch2: O ₂ , Ch3: Converted NO, Ch4: Converted NO average | | | | | |
| А | А, В | А | Ch1: SO ₂ , Ch2: O ₂ , Ch3: Converted SO ₂ , Ch4: Converted SO ₂ average | | | | | |
| В | А, В | А | Ch1: CO, Ch2: O ₂ , Ch3: Converted CO, Ch4: Converted CO average | | | | | |
| F | A, B | А | Ch1: NO, Ch2: SO ₂ , Ch3: O ₂ , Ch4: Converted NO, Ch5: Converted SO ₂ , | | | | | |
| | | | Ch6: Converted NO average, Ch7: Converted SO ₂ average | | | | | |
| G | A, B | А | Ch1: CO ₂ , Ch2: CO, Ch3: O ₂ , Ch4: Converted CO, Ch5: Converted CO average | | | | | |

1. In case of using only one analyzer.

2. In case of using two analyzers installed.

| Code symbol Contents 8h digit He digit 22nd digit Contents 9 Y Y Chi: CO, 10 Y Y Chi: CO, 11 Y Chi: CO, 12 Y Y Chi: CO, 12 Y Chi: CO, P 14 Y Chi: CO, P 14 Y Chi: CO, P 15 Y Chi: CO, P 16 Y Y Chi: CO, 17 Y Chi: CO, Chi: CO, | 1st analyzer | | | | Second analyzer | | | |
|--|--------------|---|----------|------------------------------------|-----------------|----------------|------------|--|
| Stridgit Bin digit Zind digit String B V V Ch1: CO D V V Ch1: CO E V V Ch1: CO B V V Ch1: CO E V V Ch1: CO B V V Ch1: CO E V V Ch1: CO B V V Ch1: CO G Y Ch1: CO Ch1: CO F V Ch1: CO Ch1: CO G Y Ch1: CO Ch1: CO C Y Ch1: CO Ch1: CO E A, | Code | e symbol | | | Code symbol | | | |
| B Y Y Ch1: CO, Ch1: SO, Ch1: SO, Ch2: SO, Ch1: SO, Ch2: SO, Ch2: SO, Ch2: SO, Ch2: CONVERTed CO Ch2: | | - | | Contents | 5th diait | , 6th diait | 22nd diait | Contents |
| D Y Y Ch1: CO, E Y Y Ch1: CO, B Y Y Ch1: CO, D Y Y Ch1: CO, E Y Y Ch1: CO, F Y Ch1: CO, Ch2: CO B Y Y Ch1: CO, G Y Y Ch1: CO, <td></td> <td>°</td> <td><u> </u></td> <td>Ch1: CO</td> <td></td> <td></td> <td>-</td> <td>Ch1: NO</td> | | ° | <u> </u> | Ch1: CO | | | - | Ch1: NO |
| E Y Y Ch1: CD, Ch2: CO B Y Y Ch1: CO, Ch2: CO B Y Y Ch1: CO, Ch2: CO B Y Y Ch1: CO, Ch2: CO B Y Y Ch1: CAL G Y Y | D | Y | Y | | | | | |
| G Y Y Ch1: C0, Ch2: CO B Y Y Ch1: C0, D Y Y Ch1: C0, E Y Y Ch1: C0, E Y Y Ch1: C0, E Y Y Ch1: C0, D Y Y Ch1: C0, E Y Y Ch1: C0, D Y Y Ch1: C0, D Y Y Ch1: C0, D Y Y Ch1: C0, E Y Y Ch1: C0, D A, B Y Ch1: C0, E Y Y Ch1: C0, E A, B Y Ch1: C0, C A, B Y Ch1: C0, <td>E</td> <td>Y</td> <td>Y</td> <td></td> <td></td> <td></td> <td></td> <td></td> | E | Y | Y | | | | | |
| B Y Y Ch1: CO F Y Y Ch1: CO E Y Y Ch1: CO, B Y Y Ch1: CO, B Y Y Ch1: CO, D Y Y Ch1: CO, E Y Y Ch1: CO, C Y Ch1: CO, Ch2 C A, B Y Ch1: CO, E A, B Y Ch1: CO, <td>G</td> <td>Y</td> <td>Y</td> <td></td> <td></td> <td></td> <td></td> <td></td> | G | Y | Y | | | | | |
| E Y Y Ch1: C0, Ch2: C0 B Y Y Ch1: C0, Ch2: C0 D Y Y Ch1: C0, Ch2: C0 B Y Y Ch1: C0, Ch2: C0 C Y Y Ch1: C0, Ch2: C0 D A, B Y Ch1: C0, Ch2: C0 D A, B Y Ch1: Ch4 G Y Y Ch1: Ch4 G Y Y Ch1: Ch4 G Y Y Ch1: Ch4 G A, B Y Ch1: Ch4< | В | Y | Y | | А | Y | Y | Ch1: SO ₂ |
| E Y Y Ch1: CD, Ch2: CO, B Y Ch1: CO, Ch2: CO, Ch | D | Y | Y | | | | | |
| G Y V Ch1: CO, Ch2: CO B Y Y Ch1: CO, E Y Ch1: CO, Ch2 D A, B Y Ch1: CO, | E | Y | Y | | | | | |
| D Y V Ch1: CO, Ch1: CO, E Ch1: CO, Ch1: CO, E Ch1: CO, Ch1: CO, Ch2: CO, Ch | G | Y | Y | | | | | |
| E Y Y Ch1: CH ₄ G Y Y Ch1: CO ₄ B Y Y Ch1: CO ₅ E Y Y Ch1: CO ₅ E Y Y Ch1: CO ₅ B Y Y Ch1: CO ₅ E Y Y Ch1: CO ₅ B Y Y Ch1: CO ₅ E A, B Y Ch1: CO ₅ D A, B | В | Y | Y | | F | Y | Y | Ch1: NO, Ch2: SO ₂ |
| G Y Y Ch1: CO ₂ Ch2: CO B Y Y Ch1: CO D Y Y Ch1: CO E Y Y Ch1: CO B Y Y Ch1: CO E Y Y Ch1: CO B Y Y Ch1: CO B Y Y Ch1: CO B Y Y Ch1: CH G Y Y Ch1: CO D A, B Y Ch1: CO E Y Y Ch1: CO E A, B Y Ch1: CO < | D | Y | Y | Ch1: CO ₂ | | | | |
| B Y Y Ch1: CD, D Y Y Ch1: CD, E Y Y Ch1: CD, G Y Y Ch1: CD, B Y Y Ch1: CD, D Y Y Ch1: CD, E Y Y Ch1: CD, G Y Y Ch1: CD, D A, B Y Ch1: CD, Ch1: CD, Ch1: CD, Ch1: CD, | E | Υ | Y | Ch1: CH₄ | | | | |
| B Y Y Ch1: CO. V Y Ch1: CO. Ch1: CO. E Y Y Ch1: CO. B Y Y Ch1: CO. B Y Y Ch1: CO. D Y Y Ch1: CO. E Y Y Ch1: CO. G Y Y Ch1: CO. F Y Y Ch1: CO. G Y Y Ch1: CO. F Y Y Ch1: CO. G Y Y Ch1: CO. F A, B A Ch1: CO. Ch1: CO. Ch2: O. Ch3: Converted NO Ch1: CO. Ch2: O. Ch4: Converted NO Ch1: CO. Ch2: O. Ch4: Converted NO Ch1: CO. Ch1: CO. Ch2: O. | G | Υ | Y | Ch1: CO ₂ , Ch2: CO | | | | |
| E Y Y Ch1: CH ₄ G Y Y Ch1: CO ₂ Ch2: CO B Y Y Ch1: CO ₂ Ch2: CO E Y Y Ch1: CO ₂ Ch2: CO B Y Y Ch1: CO ₂ Ch2: CO B Y Y Ch1: CO ₂ Ch2: CO B Y Y Ch1: CO ₂ Ch2: CO E Y Y Ch1: CO ₂ Ch2: CO E Y Y Ch1: CO ₂ Ch2: CO D A, B Y Ch1: CA Ch2: CO E A, B Y Ch1: CH ₄ Ch2: CO D A, B Y Ch1: CH ₄ Ch1: CO E A, B Y Ch1: CO Ch2: CO Ch2: CO E A, B Y Ch1: CO Ch2: CO Ch2: CO Ch2: CO E A, B Y Ch1: CO Ch2: CO Ch2: CO Ch2: CO C | В | Υ | Y | | Р | А, В | Y | Ch1: NO, Ch2: O2 |
| G Y Y Ch1: CO, Ch2: CO B Y Y Ch1: CO D Y Y Ch1: CO E Y Y Ch1: CO, Ch2: CO B Y Y Ch1: CO, Ch2: CO B Y Y Ch1: CO, Ch2: CO B Y Y Ch1: CO, Ch2: CO D Y Y Ch1: CO, Ch2: CO D A, B Y Ch1: CO, Ch2: CO D A, B Y Ch1: CO, Ch2: CO D A, B Y Ch1: CO, Ch2: CO E A, B Y Ch1: CO, Ch2: CO D A, B Y Ch1: CO, Ch2: O E A, B Y Ch1: CO, Ch2: O E A, B Y Ch1: CO, Ch2: O C Ch2: Converted CO Ch3: Converted SO, Ch3: Converted | D | Υ | Y | Ch1: CO ₂ | | | | |
| B Y Y Ch1: CO D Y Y Ch1: CO Ch1: CO E Y Y Ch1: CO Ch1: CO G Y Y Ch1: CO Ch1: CO D Y Y Ch1: CO Ch1: CO E A, B Y Ch1: CO Ch1: CO C Ch1: CO Ch1: CO Ch1: CO Ch1: CO C Ch1: CO, Ch2: O, Ch1: CO Ch1: CO Ch1: CO | E | Y | Y | Ch1: CH₄ | | | | |
| B Y Y Ch1: CO2 D Y Y Ch1: CO2 G Y Y Ch1: CO2 G Y Y Ch1: CO2 B Y Y Ch1: CO2 D Y Y Ch1: CO2 E A, B Y Ch1: CO2 C Ch1: CO2 Ch1: CO2 C Ch1: CO2 Ch1: CO2 E A, B A Ch1: CO2 | G | Y | Y | Ch1: CO ₂ , Ch2: CO | | | | |
| D Y Y Ch1: CO2, Ch1: CO2, Ch2: CO B Y Y Ch1: CO2, Ch2: CO D Y Y Ch1: CO2, Ch2: CO D Y Y Ch1: CO2, Ch2: CO E Y Y Ch1: CO2, Ch2: CO D A, B Y Ch1: CO2, Ch2: CO E A, B Y Ch1: CO2, Ch2: CO E A, B Y Ch1: CO2, Ch2: CO D A, B Y Ch1: CO2, Ch2: CO E A, B Y Ch1: CO, Ch2: CO, | В | Y | Y | | A | А, В | Y | Ch1: SO ₂ , Ch2: O ₂ |
| E Y Y Ch1: CH4 G Y Y Ch1: CO2 Ch1: CO2 D Y Y Ch1: CO2 Ch1: CO2 E A, B Y Ch1: CO2 Ch1: CO2 E A, B Y Ch1: CO2 Ch1: CO2 D A, B Y Ch1: CO2 Ch1: CO2 E A, B Y Ch1: CO2 Ch1: CO2 D A, B Y Ch1: CO2 Ch1: CO2 E A, B Y Ch1: CO2 Ch1: CO2 E A, B Y Ch1: CO2 Ch1: CO2 E A, B Y Ch1: CO2 Ch1: CO2 C Ch1: CO2 Ch1: CO2 Ch1: CO2 E A, B A Ch1: CO2 Ch1: CO2 <tr< td=""><td>D</td><td>Y</td><td>Y</td><td></td><td></td><td></td><td></td><td></td></tr<> | D | Y | Y | | | | | |
| G Y Y Ch1: CO2, Ch2: CO B Y Y Ch1: CO E Y Y Ch1: CO, Ch2: CO G Y Y Ch1: CO, Ch2: CO D A, B Y Ch1: CO, Ch2: CO E A, B Y Ch1: CO, Ch2: CO D A, B Y Ch1: CO, Ch2: CO E A, B Y Ch1: CO, Ch2: CO E A, B Y Ch1: CL4 D A, B Y Ch1: CL4 D A, B Y Ch1: CL4 D A, B Y Ch1: CL2 E A, B Y Ch1: CL4 D A, B A Ch1: NO Ch2: CO Ch2: CO Ch4: Converted SO Ch3: Converted CO Ch3: Converted SO Ch | E | Y | Y | | | | | |
| B Y Y Ch1: CO D Y Y Ch1: CO, E Y Y Ch1: CO, G Y Y Ch1: CO, D A, B Y Ch1: CO, E A, B Y Ch1: CO, C A, B Y Ch1: CH, D A, B Y Ch1: CH, D A, B Y Ch1: CH, D A, B Y Ch1: CH, Ch CH1: CO, Ch1: CH, D A, B Y Ch1: CH, Ch Ch1: CO, Ch1: CH, Ch1: CO, Ch2: O, Ch3: Converted SO, Ch4: Converted SO, Ch2: Converted CO Ch4: Converted CO Ch4: Converted NO Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO, Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO, Ch4: Converted CO | G | Y | Y | | | | | |
| DYYCh1: CO2EYYCh1: CO2Ch3: O2DA, BYCh1: CO2Ch3: Coverted NOEA, BYCh1: CO2Ch3: Coverted NODA, BYCh1: CO2Ch3: Coverted NOEA, BYCh1: CO2Ch3: Coverted NOEA, BYCh1: CO2Ch3: Coverted NOEA, BYCh1: CO2Ch3: Coverted SO2Ch4: Converted SO2Ch4: Converted SO2Ch4: Converted SO2DA, BYCh1: CD2EA, BYCh1: CD2EA, BYCh1: CD2EA, BYCh1: CD2EA, BYCh1: CD2EA, BYCh1: CD2CCh3: Converted SO2Ch4: Converted SO2CH4: Converted CO2Ch3: Converted CO2Ch4: Converted NOCH4: Converted CO2Ch4: Converted CO2Ch4: Converted CO2GA, BACh1: CO2, Ch2: CO2GA | | Y | Y | | F | A, B | Y | Ch1: NO, Ch2: SO ₂ |
| EYYCh1: CH4GYYCh1: CO2, Ch2: CODA, BYCh1: CO2EA, BYCh1: CA4DA, BYCh1: CO2EA, BYCh1: CA4DA, BYCh1: CA4DA, BYCh1: CA4DA, BYCh1: CA4DA, BYCh1: CA4DA, BYCh1: CO2EA, BYCh1: CO2EA, BYCh1: CO2EA, BYCh1: CO2CCh2: Co2Ch2: Co2CCh2: Co2Ch2: Co2CCh2: Co2Ch2: Co2CCh2: Co2Ch2: Co2CCh1: CO2Ch2: Co2EA, BYCh1: CA4DA, BYCh1: CO2EA, BACh1: CO2EA, BACh1: CO2CCh2: Co2Ch2: CO2CCh2: Co2Ch3: Converted COCCh2: Co2Ch3: Converted COCCh4: Converted COCh4: Converted COCCh1: CO2, Ch2: CO2Ch3: Converted COCCh4: Converted COCh4: Converted COCCh4: Converted | D | Y | Y | | | | | - |
| G Y Y Ch1: CO2, Ch2: CO D A, B Y Ch1: CO2 E A, B Y Ch1: CH4 D A, B Y Ch1: CO2 E A, B Y Ch1: CO2 D A, B Y Ch1: CO2 E A, B Y Ch1: CO2 C Ch3: Converted CO2 Ch4: Converted SO2 Ch3: Converted CO Ch3: Converted NO Ch4: Converted SO2 C Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Convert | E | Y | Y | | | | | |
| D A, B Y Ch1: CO2 E A, B Y Ch1: CH4 D A, B Y Ch1: CC2 E A, B Y Ch1: CC2 C A, B Y Ch1: CC2 D A, B Y Ch1: CC2 E A, B Y Ch1: CC2 C Ch3: Converted CO2 Ch4: Converted CO average G A, B A Ch1: CO2, Ch2: CO, Ch3: CO2 Ch4: Converted CO Ch3: Converted CO Ch3: Converted NO Ch5: Converted CO Ch3: CO2 Ch4: Converted CO Ch4: Converted CO Ch3: CO2 Ch3: CO2 Ch4: Converted CO Ch3: CO2 Ch3: Converted SO2 | | | | | | | | |
| Image: CharacterizationImage: Characterization | L | A, B | Y | | Р | A, B | Α | Ch1: NO |
| EA, BYCh1: CH4Ch3: Converted NO Ch4: Converted NO averageDA, BYCh1: CO2A, BYCh1: CH4Ch2: O2 Ch3: Converted SO2 averageDA, BYCh1: CO2Ch3: Converted SO2 averageDA, BYCh1: CO2Ch4: Converted SO2 averageDA, BYCh1: CO2Ch3: Converted SO2 averageEA, BYCh1: CO2Ch4: Converted SO2 averageEA, BYCh1: CD2Ch3: Converted SO2 averageBA, BACh1: CO, Ch2: O2 Ch4: Converted CO averageFA, BGA, BACh1: CO, Ch2: CO2 Ch4: Converted CO averagePDAGA, BACh1: CO, Ch2: CO2 Ch4: Converted CO averagePDAGA, BACh1: CO2, Ch2: CO2 Ch4: Converted CO averageADAGA, BACh1: CO2, Ch2: CO2 Ch4: Converted CO averageADAGA, BACh1: CO2, Ch2: CO2 Ch4: Converted CO averageADAGA, BACh1: CO2, Ch2: CO2 Ch4: Converted CO averageFDAGA, BACh1: CO2, Ch2: CO2 Ch4: Converted CO Ch4: Converted CO <td>-</td> <td>, =</td> <td></td> <td>0</td> <td></td> <td>, =</td> <td></td> <td></td> | - | , = | | 0 | | , = | | |
| DA, BYCh1: CO2Ch4: Converted NO averageDA, BYCh1: CO2AA, BACh1: SO2Ch3: Converted SO2EA, BYCh1: CC2Ch3: Converted SO2Ch4: Converted SO2Ch4: Converted SO2DA, BYCh1: CD2FA, BACh1: NOEA, BYCh1: CL4Ch1: CO2Ch3: Converted SO2Ch4: Converted NOEA, BYCh1: CL4Ch1: CO2Ch3: Converted NOCh2: SO2CCh3: Converted COCh3: Converted COCh4: Converted NOCh5: Converted NOCA, BACh1: CO2, Ch2: COCh4: Converted COCh4: Converted COCCh3: Converted COCh4: Converted COCh3: Converted COCCh3: Converted COCh4: Converted COCh4: Converted COCCh3: Converted COCh4: Converted COCh4: Converted COCCh3: Converted COCh4: Converted COCh4: Converted COCCh4: Converted COCh4: Converted COCh4: Converted CO <tr< td=""><td>F</td><td>A.B</td><td>Y</td><td>Ch1: CH4</td><td></td><td></td><td></td><td></td></tr<> | F | A.B | Y | Ch1: CH4 | | | | |
| DA, BYCh1: CO2 . . Ch2: O2 . Ch2: O2 . Ch2: O2 . Ch3: Converted SO2 averageEA, BYCh1: CO2 . .FA, BACh1: NO . . Ch4: Converted SO2 averageEA, BYCh1: CH4 . .FA, BACh1: NO Ch4: Converted NO averageBA, BACh1: CO, Ch2: O2PDACh1: NOPDACh1: NOPDACh1: NOPDACh1: NOPDACh1: NOPDACh1: NOPDACh1: SO2PDACh1: NOCh1: CO, Ch2: O2ADACh1: SO2ADACh1: SO2Ch1: CO, Ch2: O2 <br< td=""><td> -</td><td></td><td></td><td>0111 0114</td><td></td><td></td><td></td><td></td></br<> | - | | | 0111 0114 | | | | |
| EA, BYCh1: CH4Ch2: O2DA, BYCh1: CO2Ch3: Converted SO2Ch4: Converted SO2DA, BYCh1: CO2Ch3: Converted SO2Ch4: Converted SO2EA, BYCh1: CH4Ch1: NOCh2: SO2EA, BYCh1: CH4Ch1: CO2Ch3: Converted NOEA, BACh1: CO2Ch3: Converted SO2Ch4: Converted NOBA, BACh1: CO2, Ch2: CO2Ch3: Converted NOCh4: Converted NOCh3: Converted COCh4: Converted COCh4: Converted COCh3: Converted COCh3: Converted COCh3: Converted COCh3: Converted COCh3: Converted COCh3: Converted COCh4: Converted COCh3: O2Ch4: Converted COCh4: Converted COCh4: Converted COCh4: Converted COCh3: O2Ch4: Converted COCh4: Converted COCh4: Converted COCh3: Converted SO2Ch4: Converted COCh4: Converted COCh4: Converted COCh3: Converted SO2Ch4: Converted COCh4: Converted COCh4: Converted COCh3: Converted SO2Ch4: Converted COCh4: Converted COCh4: Converted COCh3: Converted NOCh4: Converted COCh4: Converted COCh4: Converted COCh3: Converted NOCh4: Converted COCh4: Converted COCh4: Converted COCh3: Converted NOCh4: Converted COCh4: Converted COCh4: Converted NOCh2: SO2Ch4: Converted COCh4: Converted COCh4: Converted NOCh2: SO | D | AB | Y | | Δ | AB | Δ | |
| EA, BYCh1: CH4Ch3: Converted SO2 Ch4: Converted SO2 averageDA, BYCh1: CO2Ch3: Converted SO2 Ch4: Converted SO2 averageEA, BYCh1: CH4FA, BAEA, BYCh1: CO, Ch2: O2 Ch3: Converted CO Ch4: Converted CO | | Α, Β | | | | 7,0 | | |
| Image: Definition of the converted No Ch4: Converted SO: averageDA, BYCh1: CO2EA, BYCh1: CH4EA, BYCh1: CH4EA, BACh1: CO, Ch2: O2 Ch4: Converted NO Ch3: Converted CO Ch4: Converted CO averageFA, BABA, BACh1: CO, Ch2: O2 Ch4: Converted CO Ch4: Converted CO averagePDACh1: NO Ch2: Converted NO average Ch7: Converted NO average Ch7: Converted NO averageGA, BACh1: CO, Ch2: O2 Ch4: Converted CO averagePDACh1: SO2 Ch2: Converted NO averageBA, BACh1: CO2, Ch2: O2 Ch4: Converted CO averageADACh1: SO2 Ch2: Converted SO2 averageGA, BACh1: CO2, Ch2: O2 Ch4: Converted CO averageADACh1: SO2 Ch2: Converted SO2 Ch2: Converted SO2 Ch3: O2 Ch4: Converted CO averageBA, BACh1: CO2, Ch2: O2 Ch4: Converted CO Ch4: Converted CO averageFDACh1: NO Ch2: SO2 Ch3: Converted SO2 Ch3: Converted SO2 Ch4: Converted CO Ch4: Converted CO averageBA, BACh1: CO2, Ch2: C2, Ch3: C2, Ch2: C0, Ch3: C2 Ch4: Converted CO Ch4: Converted | F | AB | Y | Ch1: CH | | | | |
| DA, BYCh1: CO2EA, BYCh1: CH4EA, BYCh1: CH4FA, BACh1: NO Ch2: SO2 Ch3: O2 Ch4: Converted NO Ch5: Converted SO2 Ch6: Converted SO2 Ch4: Converted CO Ch2: Converted NO Ch2: Converted SO2 Ch2: Converted SO2 Ch2: Converted SO2 Ch3: | - | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | | | | | | |
| EA, BYCh1: CH4Ch2: SO2 Ch3: O2 Ch4: Converted NO Ch5: Converted NO Ch5: Converted SO2 Ch6: Converted NO Ch5: Converted SO2 Ch6: Converted SO2 Ch6: Converted NO Ch6: Converted SO2 Ch6: Converted NO Ch6: Converted SO2 Ch6: Converted NO Ch2: Converted SO2 Ch2: Converted SO2 Ch2: Converted SO2 Ch3: Co | D | AB | Y | Ch1: CO ₂ | F | AB | Δ | v |
| EA, BYCh1: CH4Ch3: O2Ch3: O2EA, BYCh1: CH4Ch3: O2Ch4: Converted NOBA, BACh1: CO, Ch2: O2Ch3: Converted COCh7: Converted SO2 averageGA, BACh1: CO2, Ch2: CO, Ch3: Converted CO Ch4: Converted CO averagePDABA, BACh1: CO2, Ch2: CO, Ch3: O2Ch3: O2Ch3: Converted NOGA, BACh1: CO2, Ch2: CO, Ch3: Converted CO Ch4: Converted CO averageADABA, BACh1: CO2, Ch2: CO, Ch3: Converted CO Ch4: Converted CO averageADAGA, BACh1: CO2, Ch2: CO, Ch3: Converted CO Ch4: Converted CO averageADABA, BACh1: CO2, Ch2: CO, Ch3: Converted CO Ch4: Converted CO Ch4: Converted CO averageFDABA, BACh1: CO2, Ch2: CO, Ch3: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch3: O2 Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch3: O2 Ch4: Converted CO Ch4: | | | | 0111 002 | | | `` | |
| EA, BYCh1: CH4Ch4: Converted NO Ch5: Converted SO2 Ch6: Converted SO2 Ch7: Converted SO2 Ch2: Converted SO2 Ch2: Converted NO Ch2: Converted SO2 Ch2: Converted SO2 Ch3: Converted SO2 <b< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>=</td></b<> | | | | | | | | = |
| BA, BACh1: CO, Ch2: O2 Ch3: Converted CO Ch4: Converted CO< | F | A.B | Y | Ch1: CH4 | | | | |
| BA, BACh1: CO, Ch2: O2 Ch3: Converted CO Ch4: Converted CO Ch4: Converted CO averagePDACh1: NO Ch2: Converted NO Ch2: Converted NO Ch2: Converted NO Ch3: Converted NO Ch3: Converted CO Ch4: Con | | , = | | 0 | | | | |
| BA, BACh1: CO, Ch2: O2 Ch3: Converted CO Ch4: Converted CO averagePDACh1: NO Ch2: Converted NO Ch2: Converted NO Ch3: Converted NO averageGA, BACh1: CO2, Ch2: CO, Ch3: O2 Ch4: Converted CO Ch4: Converted CO Ch3: Converted CO Ch4: Co | | | | | | | | |
| BA, BACh1: CO, Ch2: O2 Ch3: Converted CO Ch4: Converted CO averagePDACh1: NO Ch2: Converted NO Ch2: Converted NO Ch3: O2 Ch4: Converted CO averageGA, BACh1: CO2, Ch2: CO, Ch3: O2 Ch4: Converted CO averagePDACh1: NO Ch2: Converted NO Ch3: Converted NO averageBA, BACh1: CO, Ch2: O2 Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO averageADACh1: SO2 Ch2: Converted SO2 Ch3: Converted SO2 Ch3: Converted SO2 Ch3: Converted SO2 Ch3: Converted CO Ch3: O2 Ch4: Converted CO Ch4: Converted | | | | | | | | 0 |
| A, BACh1: CO2, Ch2: CO, Ch3: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch5: Converted CO averageABACh1: CO2, Ch2: CO, Ch3: Converted NO Ch3: Converted NO Ch3: Converted NO Ch3: Converted NO Ch3: Converted NO averageBA, BACh1: CO, Ch2: O2 Ch4: Converted CO Ch4: Converted CO averageADACh1: SO2 Ch2: Converted SO2 Ch2: Converted SO2 Ch3: Converted NO Ch2: SO2 Ch3: Converted NO Ch4: Converted SO2 Ch4: Converted SO2 Ch3: Converted NO Ch4: Converted SO2 Ch3: Converted NO Ch4: Converted SO2 Ch4: Converted SO2 Ch3: Converted SO2 <td>В</td> <td>A. B</td> <td>A</td> <td>$Ch1^{\circ}CO$ $Ch2^{\circ}O_{2}$</td> <td>Р</td> <td>D</td> <td>A</td> <td>0</td> | В | A. B | A | $Ch1^{\circ}CO$ $Ch2^{\circ}O_{2}$ | Р | D | A | 0 |
| GA, BACh1: CO2, Ch2: CO, Ch3: O2 Ch4: Converted CO ch5: Converted CO | | , = | | | | - | | |
| GA, BACh1: CO2, Ch2: CO, Ch3: O2 Ch4: Converted CO Ch5: Converted CO averageBA, BACh1: CO, Ch2: O2 Ch3: Converted CO Ch4: Converted CO averageADACh1: SO2 Ch2: Converted SO2 Ch2: Converted SO2 Ch3: Converted SO2 Ch3: Converted CO Ch4: Converted CO Ch4: Converted CO Ch5: Converted CO Ch4: Converted CO Ch4: Converted CO Ch5: Converted CO Ch4: Converted CO Ch5: Converted CO Ch4: Converted CO Ch3: Converted CO Ch4: Converted CO Ch3: Converted CO Ch3: Converted CO Ch3: Converted CO Ch3: Converted CO Ch4: Converted CO Ch3: O2 Ch4: Converted CO Ch4: Converted CO Ch3: O2 Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch3: O2 Ch4: Converted CO Ch4: Converted SO2 Ch4: Converted SO2 <br< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></br<> | | | | | | | | |
| Chi ColyChi ColyCh3: O2Ch4: Converted COCh5: Converted CO averageBA, BACh1: CO, Ch2: O2Ch3: Converted COCh4: Converted COCh5: Converted COCh4: Converted COCh5: Converted COCh3: Converted COCh4: Converted COCh3: Converted COCh4: Converted CO< | G | A.B | Α | | | | | che contener ne average |
| BA, BACh1: CO, Ch2: O2 Ch3: Converted CO Ch4: Converted CO Ch5: Converted CO Ch4: Converted SO2 Ch4: C | ľ | | | | | | | |
| BA, BACh1: CO, Ch2: O2 Ch3: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch3: O2 Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch5: Converted CO Ch4: Converted CO Ch5: Converted CO Ch4: Converted CO Ch3: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch3: Converted CO Ch4: C | | | | | | | | |
| B A, B A Ch1: CO, Ch2: O2 Ch3: Converted CO Ch4: Converted CO Ch4: Converted CO average A D A Ch1: SO2 Ch2: Converted SO2 Ch2: Converted SO2 Ch3: Converted SO2 Ch3: Converted SO2 Ch3: Converted SO2 Ch4: Converted CO Ch5: Converted CO Ch5: Converted CO Ch3: Converted CO Ch3: Converted CO Ch4: Converted SO2 Ch4: Converted SO2 | | | | | | | | |
| GA, BACh1: CO2, Ch2: CO, Ch4: Converted CO averageCh2: Converted SO2 Ch3: Converted SO2 averageGA, BACh1: CO2, Ch2: CO, Ch3: O2 Ch4: Converted CO averageFDACh1: NO Ch2: SO2 Ch3: Converted NO Ch3: Converted NO Ch4: Converted SO2BA, BACh1: CO, Ch2: O2 Ch4: Converted CO Ch4: Converted CO Ch3: O2 Ch4: Converted CO Ch4: Converted CO Ch3: O2 Ch4: Converted COFDACh1: NO Ch2: SO2 Ch3: Converted NO Ch4: Converted SO2 Ch4: Converted SO | B | ΔR | Δ | | Δ | D | Δ | Ch1: SO. |
| GA, BACh1: CO2, Ch2: CO, Ch3: O2 Ch4: Converted CO Ch5: Converted CO Ch5: Converted CO averageCh3: Converted SO2 averageBA, BACh1: CO, Ch2: O2 Ch4: Converted CO Ch3: Converted CO Ch3: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO averageFDACh1: NO Ch2: SO2 Ch3: Converted NO Ch4: Converted SO2 Ch4: Converted CO Ch4: Converted COFDACh1: NO Ch2: SO2 Ch3: Converted NO Ch4: Converted SO2 Ch4: Converted SO2 Ch4: Converted SO2 Ch5: Converted SO2 average | | Α, Β | | · | | | | - |
| G A, B A Ch1: CO ₂ , Ch2: CO, Ch3: O ₂ Ch4: Converted CO Ch5: Converted CO average B A, B A Ch1: CO, Ch2: O ₂ Ch3: Converted CO Ch3: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Converted CO, Ch3: O ₂ Ch3: O ₂ Ch4: Converted CO F D A Ch1: NO Ch2: SO ₂ Ch3: Converted NO Ch4: Converted SO ₂ Ch4: Converted CO G A, B A Ch1: CO ₂ , Ch2: CO, Ch3: O ₂ Ch4: Converted CO F D A Ch1: NO Ch4: Converted SO ₂ Ch5: Converted NO average Ch6: Converted SO ₂ average | | | | | | | | |
| Ch3: O2 Ch4: Converted CO Ch5: Converted CO averageFDACh1: NO Ch2: SO2 Ch3: Converted CO Ch3: Converted CO Ch4: Converted CO Ch4: Converted CO averageGA, BACh1: CO2, Ch2: CO2 Ch4: Converted CO averageFDACh1: NO Ch2: SO2 Ch3: Converted NO Ch4: Converted SO2 Ch3: O2 Ch4: Converted COGA, BACh1: CO2, Ch2: CO2 Ch3: O2 Ch4: Converted COFDACh1: NO Ch2: SO2 Ch3: Converted NO Ch4: Converted SO2 Ch5: Converted NO average Ch6: Converted SO2 average | G | ΔR | Δ | | | | | clis. converted 502 average |
| B A, B A Ch1: CO, Ch2: O2 F D A Ch1: NO B A, B A Ch1: CO, Ch2: O2 F D A Ch1: NO Ch3: Converted CO Ch3: Converted CO Ch4: Converted CO Ch2: SO2 Ch3: Converted NO G A, B A Ch1: CO2, Ch2: CO, Ch3: O2 Ch3: O2 Ch4: Converted CO CH4: Converted CO Ch4: Converted CO Ch4: Converted CO Ch4: Converted SO2 Ch5: Converted NO average | | Α, Β | | | | | | |
| Image: Ch5: Converted CO averageImage: Ch5: Converted CO averageBA, BACh1: CO, Ch2: O2 Ch3: Converted CO Ch4: Converted CO averageFDACh1: NO Ch2: SO2 | | | | | | | | |
| B A, B A Ch1: CO, Ch2: O2 Ch3: Converted CO Ch4: Converted CO average F D A Ch1: NO Ch2: SO2 Ch3: Converted NO Ch3: Converted NO Ch4: Converted SO2 Ch4: Converted CO G A, B A Ch1: CO2, Ch2: CO, Ch3: O2 Ch4: Converted CO F D A Ch1: NO Ch2: SO2 Ch3: Converted NO Ch4: Converted SO2 Ch5: Converted NO average Ch6: Converted SO2 average | | | | | | | | |
| G A, B A Ch1: C02, Ch2: CO2, Ch2: CD2, Ch2: CO2, Ch2: CD2, C | в | ΔR | Δ | U | F | | Δ | Ch1: NO |
| G A, B A Ch1: CO2, Ch2: CO, Ch3: O2 Ch3: Converted NO Ch3: O2 Ch3: O2 Ch5: Converted NO average Ch4: Converted CO Ch5: Converted SO2 Ch5: Converted SO2 average | | А, В | ^ | | | | | |
| G A, B A Ch1: CO2, Ch2: CO, Ch3: O2 Ch4: Converted SO2 Ch3: O2 Ch5: Converted NO average Ch6: Converted SO2 average | | | | | | | | |
| Ch3: O2 Ch5: Converted NO average Ch4: Converted CO Ch6: Converted SO2 average | | | ٨ | | | | | |
| Ch4: Converted CO Ch6: Converted SO ₂ average | | А, В | ~ | | | | | |
| | | | | | | | | 0 |
| | | | | | | | | Cho: Converted SO ₂ average |
| | L | | | Cho: Converted CO average | | | | |

Example of Code symbol for replacement

| [ZRG] |
|-------|
|-------|

| | Component | Example of code symbol | | |
|--------------|--------------------------------------|--|--|--|
| 1st analyzer | CO, CO ₂ , O ₂ | ZRG6GBB2-0B0ND-FF1F5FY | | |
| 2nd analyzer | NO, SO ₂ , O ₂ | ZRG6FBB2-0B0ND-FF1F5FY | | |
| [zĸjĸ] | | | | |
| | Component | Example of code symbol | | |
| 1st analyzer | CO, CO ₂ , O ₂ | ZKJKGA15-YJBFB-FYYYYVVY-CAB $\rightarrow O_2$ range 0-25% External zirconia O_2 sensor | | |
| 2nd analyzer | NO, SO ₂ | ZKJKFD15-YJBFB-FYYYYYY-CAB | | |

SCOPE OF DELIVERY

- Gas analyzer ... 1 unit
- Spare fuses (250V, 3.15A AC, delay type) ... 2 pcs
- Instruction manual ... 1 copy

ORDERING INFORMATION

1. Code symbols

→ without external O₂ indication

2. Application and composition of sample gas

Items to be prepared separately

- Various sampling devices (refer to Data Sheets for the sampling devices)
- Dedicated zirconia O₂ sensor (see Page 16)

Exclusive Zirconia O₂ Sensor (to be purchased separately)

This sensor should be used with ZKJ. Measuring method: Zirconia system Measurable component and measuring range:

| | Measurable component | | Range | | |
|------------------|-------------------------|--------------------------------|---------------------------------------|--|--|
| | O ₂ | Oxygen | 0 to 25vol% | | |
| Repeatability: | | Within ± | Within ± 0.5% of full scale | | |
| Linearity: | | Within ± 1% of full scale | | | |
| Zero drift: | | Within ± 1% of full scale/week | | | |
| Span drift: | | Within ± 2% of full scale/week | | | |
| Response time: A | | Approx. | Approx. 20 seconds (for 90% response) | | |
| Mea | Measured gas flow rate: | | | | |

0.5 ± 0.25L / min Remark: The Zirconia system, due to its principle, may produce a measuring error due to relative concentration versus the com-bustible O2 gas concentration. Also, a corrosive gas (SO₂ of 250 ppm or more, etc.) may affect the life of the sensor.

Gas inlet/outlet size: Rc1/4 or NPT1/4

| Rated frequency ; 50Hz/60Hz Max. rated power ; 215VA (during power ON) 65VA (during steady- state operation) | Power supply: | Rated voltage | ; 100 to 115V AC or 200 to 240V AC |
|--|---------------|---------------|--|
| | | | ; 215VA (during power ON) 65VA (during steady- |

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OUTLINE DIAGRAM (Unit:mm)



EXTERNAL CONNECTION DIAGRAM



Information in this catalog is subject to change without notice. Read the instruction manuals thoroughly before using the products.

Fuji Electric Co., Ltd.

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| Enclosure: | Steel casing, for indoor application | | | |
|-------------------------------|--------------------------------------|--|--|--|
| Indication: | Temperature indication (LED) | | | |
| Temperature alar | m output: | | | |
| | Contact output 1a contact, | | | |
| | Contact capacity 220V, 1A AC | | | |
| | (resistive load) | | | |
| Outer dimensions (H x W x D): | | | | |
| | 141 x 170 x 190mm | | | |
| Mass {weight}: | Approx. 3kg | | | |
| Finish color: | Munsell 5Y 7/1 | | | |

CODE SYMBOLS

| 1 2 3 4 5 6 7 8 Z F K 7 Y Y 4 - | 9 10 11 12 13 Y 0 Y Y | Description |
|------------------------------------|--------------------------|---|
| 7 Y Y | | Measuring method Zirconia method |
| 9 B C | | Power supply 100 to 115V AC 50/60Hz(Standard) 200 to 240V AC 50/60Hz(Standard) 200 to 240V AC 50/60Hz(CE mark) |
| | 1 8 | Gas inlet/outlet size Rc ¹ /4 NPT ¹ /4 |