INFRARED GAS ANALYZER FOR STIC GAS

DATA SHEET ZSK

This infrared gas analyzer (ZSK) is composed of gas analyzer units, oxygen sensor and gas sampling equipment. It is capable of continuous measuring concentration of gases such as NOx, SO_2, CO, CO_2 and O_2 contained in the flue gas generated from various boilers or garbage incinerators.

FEATURES

1. **Gas concentrations of 5 components measurable simultaneously and continuously**
   The infrared ray method has integrated the measurements of NOx, SO_2, CO and CO_2 and the gas concentrations of 5 components can be measured simultaneously and continuously with the zirconia oxygen analyzer.
2. **A high-sensitivity mass flow sensor is used in the detector unit of infrared method.**
   Due to use of single beam system for measurement, maintenance is easy and an excellent stability is ensured for a long period of time.
3. **Space-saving configuration is available with the maintenance from the front structure**
   The main unit is downsized by half of that of the conventional product. The complete maintenance from the front makes it easy to use.
4. **The analyzer has a host of capabilities**
   Provided with a variety of functions such as O_2 correction output, average value output, auto calibration, auto range selection, alarm, etc.

SPECIFICATIONS

Standard Specifications

- Measuring principle:
  NOx, SO_2, CO, CO_2: Non-dispersive infrared absorption (NDIR) method
  O_2; Zirconia system
- Measurable component and min./max. measuring range:
  NOx : 0 to 200ppm/0 to 5000ppm
  SO_2 : 0 to 200ppm/0 to 5000ppm
  CO : 0 to 200ppm/0 to 5000ppm
  CO_2 : 0 to 10%/0 to 20%
  O_2 : 0 to 10%/0 to 25%
- Measuring range:
  Max. range ratio 1:10 (See code symbols.)
- Warm-up time: 4 hours or less after power ON
- Analog output signal:
  4 to 20mA DC simultaneous output for each (Non-isolated or isolated: as specified by code symbols)
  - Instantaneous value output (NOx, SO_2, CO, CO_2, O_2) 5 points
  - Instantaneous O_2 correction value (NOx, SO_2, CO) 3 points
    * Provided with O_2
  - O_2 correction average value (NOx, SO_2, CO) 3 points
    * Provided with O_2
  - Allowable load resistance: 550Ω or less (750Ω or less for insulation output)
- Contact output:
  (1) 1a contact for each (Contact capacity: 250V AC 2A, 30V DC 3A)
  - Range identification for each component, analyzer unit error, calibration error, during automatic calibration, during maintenance

  (2) 1c contact for each (Contact capacity: 250V AC 1A, 30V DC 1A)
  - Instantaneous/concentration value alarm for each component (H, L, HL can be set).

- **Contact input:** No-voltage contact (in increments of 1.5 sec or more)
  - Auto calibration start, average value reset
  - No-voltage contact (holding status)
  - Range selection (First range at contact closure)
  - Output hold, Remote pump OFF (OFF at contact closure)
- **Display:** LCD with back light
  - Instantaneous value display (NOx, SO_2, CO, CO_2, O_2) *Provided with O_2
  - Instantaneous O_2 correction value (NOx, SO_2, O_2) *Provided with O_2
  - O_2 correction average value (NOx, SO_2, CO) *Provided with O_2
  - Each parameter setting (English)
- **Fluorescent lamp inside the cubicle:** Provided as standard
- **Recorder (option):** Paperless recorder (Fuji Electric's type PHR)
  See EDS10-74d.
- **Gas extractor:** Electrical heating type (filter built-in)
  - 40 µm-SUS316 wire gauze filter
  - Flange JIS 5K 65AFF
  - Mass: Approx. 9kg (except for gas extractor)
  - Power supply voltage: 100VAC 50/60Hz
  - Power consumption: Approx. 100VA
  - Sampling tube: material and length are as specified by code symbols.
    SUS316 (Length: 300, 400, 600, 800, 1000mm)
    Titanium (Length: 600, 800, 1000mm)
    Sic (Length: 700, 900mm)
    *SUS316 is used at temperature 800°C or lower.
    *Titanium is used at temperature 1000°C or lower.
    *Sic is used at temperature 1300°C or lower.
- **Sampling gas tube:** ϕ10/ϕ8mm Teflon tube or heating tube (Max. 30m)
  Heating tube is specified in the following cases
  (1) Ambient temperature is lower than -5°C.
  (2) The tube length is 10m or more at SO_2 measurement. (Power supply voltage: 100VAC 50/60Hz, Power consumption: 36VA/m)
- **Rated operation conditions:**
  - Ambient temperature: –5 to 40°C (as specified by code symbols)
  - Ambient humidity: 90% RH or less
  - Power supply voltage: 100,110,115,200,230V AC ±15% (±10% for fluorescent lamp) (as specified by code symbols)
  - Frequency: 50 or 60Hz ±0.5Hz
  - Power consumption: Max. 600VA (except for gas extractor and heating tube)
- **Storage conditions:**
  - Ambient temperature: –20 to 60°C (Note that water in the gas conditioner is drained.)
  - Ambient humidity: 95% RH or less
- **Dry air:** (Necessary when the first range of gas dryer purging for SO_2 analyzer is 500ppm or more or when using oil/coal boiler.)
  Dew point: –20°C DP or less
  Pressure: 100kPa to 400kPa
  Dust, mist: none
- **Outer dimensions (H x W x D):**
  Indoor type: 1710 × 600 × 490mm
  Outdoor type: 1780 × 615 × 600mm
- **Mass:** Approx. 200kg (except for standard gas)
- **Cubicle finish color:** Munsell 5Y7/1 (semi-gloss)
- **Cubicle structure:** Indoor use or outdoor use type, single swing front door
  Plate thickness: 2.3mm standard (both cabinet and door)
- **Others:** Six standard gas (3.4L) cylinders can be accommodated (zero gas (10L) cylinders can be also accommodated).
  Note) After the warm-up time, variation up to 4 hours should be ±2% FS or less.
- **Serial No. for measuring method:** Pending for type approval

Standard Functions

Functions	Contents of functions
O_2 correction	• Conversion of measured NOx,SO_2,and CO gas concentrations into values at standard O_2 concentration Correction formula: $C = \frac{C_S(21-O_N)}{21-O_S}$ C : Converted concentration C_S : Measured gas value of concentration O_S : Measured O_2 concentration O_N : Standard O_2 concentration (Oil based fuel 4%, gas based fuel 5%, coal based fuel 6%, refuse incinerator 12%) Setting range: 0 to 19% • The result of correction can output as display and 4 to 20mA DC signal.
Auto calibration	• Gas analyzer unit is auto-calibrated. • Interval setting range of auto calibration: Variable within 1 to 99 hours (in increments of 1 hour) or 1 to 40 days (in increments of 1 day). • Time setting range of auto calibration gas to be introduced: Variable within 60 to 599 seconds (in increments of 1sec) • Contact output for auto/manual calibration error is provided when an amount of calibration exceeds 50% FS. • Contact output during auto calibration and maintenance: Provided during calibration gas flow, and replacement. Also provided during maintenance. • Auto calibration remote start contact input: Calibration starts at opening after short-circuit for 1.5 sec or longer. • Standard gas consumption: Approx. 1 year with 3.4 L cylinder in a calibration cycle of 7 days
Auto zero calibration	• Zero point is calibrated periodically at the predetermined cycle. This cycle is independent on "Auto calibration" cycle. • Interval setting range of auto zero calibration: Variable within 1 to 99 hours (in increments of 1 hour) or 1 to 40 days (in increments of 1 day). • Setting range of gas flow time: 60 to 900 sec (in increments of 1 sec)
O_2 correction average value, O_2 average value	• NOx, SO_2 and CO values are averaged after O_2 correction, and the result is indicated and output in 4 to 20 mA DC. • Averaging time is settable by key operation at the front of analyzer unit. • Setting range: 1 to 59 min, 1 to 4 hour (Shipping in 1H)
Remote output hold	• The output signal values are collectively held according to external contact input. • Output is held during short-circuit.
Average value reset input	• Resets output and indication of O_2 correction average value according to external contact input. • Output and indication are reset by a short-circuit for 1.5 sec or longer.
Auto range selection	• Automatically changed from low range to high range, and from high range to low range. Allows range to switch from low to high range when 90%FS or less is available in the low range. Allows range to switch from high to low range when 80%FS or less is available in the high range.
Remote range selection	• Low or high range is selectable for each sample component via external contact input. • Selects high range for open-circuit, and low range for short-circuit.
Output for range identification signal	• Discrimination between low and high ranges is output through a contact. • Low range at contact closure
Concentration alarm contact output	• Instantaneous value alarm is settable for each sample component. • High, Low, High or Low is settable by key operation at the front of analyzer unit. • Contact output hysteresis is also settable. • Contact is 1C type.
Contact output for analyzer error	• Contact output is provided when the analyzer unit is abnormal.
Temperature input signal	• K thermocouple input x 2 (for recorder available at option)

Performance

- **Repeatability:** ±0.5% FS
- **Zero drift:** Within ±2.0% FS/week
  (When auto zero calibration is performed)
  Within ±2.0% FS/month for O_2 analyzer
- **Span drift:** ±2.0% or less/week
  Within ±2.0% FS/month for O_2 analyzer
- **Linearity:** Within ±1.0% FS
- **Response time:** 90% indication after extracting sample gas through the inlet
  NOx : 120 sec or less
  SO_2 : 240 sec or less
  CO : 120 sec or less
  O_2, CO_2 : 120 sec or less
- **Sample gas extracting rate:**
  Approx. 2L/min

Standard Requirements for Measuring Gases

- **Temperature:** 60 to 800°C (standard)
  Nonstandard: 1000°C
  (Material of gas extractor: Titanium)
  1300°C (Material of gas extractor: SiC)
- **Dust:** 100mg/Nm^3 or less
- **Pressure:** –5k to +5kPa (selected by code symbols)
- **Component:**

SO_2	: 500ppm or less
NOx	: 1000 ppm or less
CO_2	: 0 to 15%
CO	: 0 to 2000ppm or less
O_2	: 1 to 21%
Hcl	: 500ppm or less
Remaining	: N_2, H_2O

Installation Conditions

- Select a place not subjected to direct sunlight or radiation from a high-temperature object. If such a place cannot be found, a roof or cover should be prepared for protection.
- Avoid a place where receives heavy vibration.
- Select a place which is clean around the analyzer.

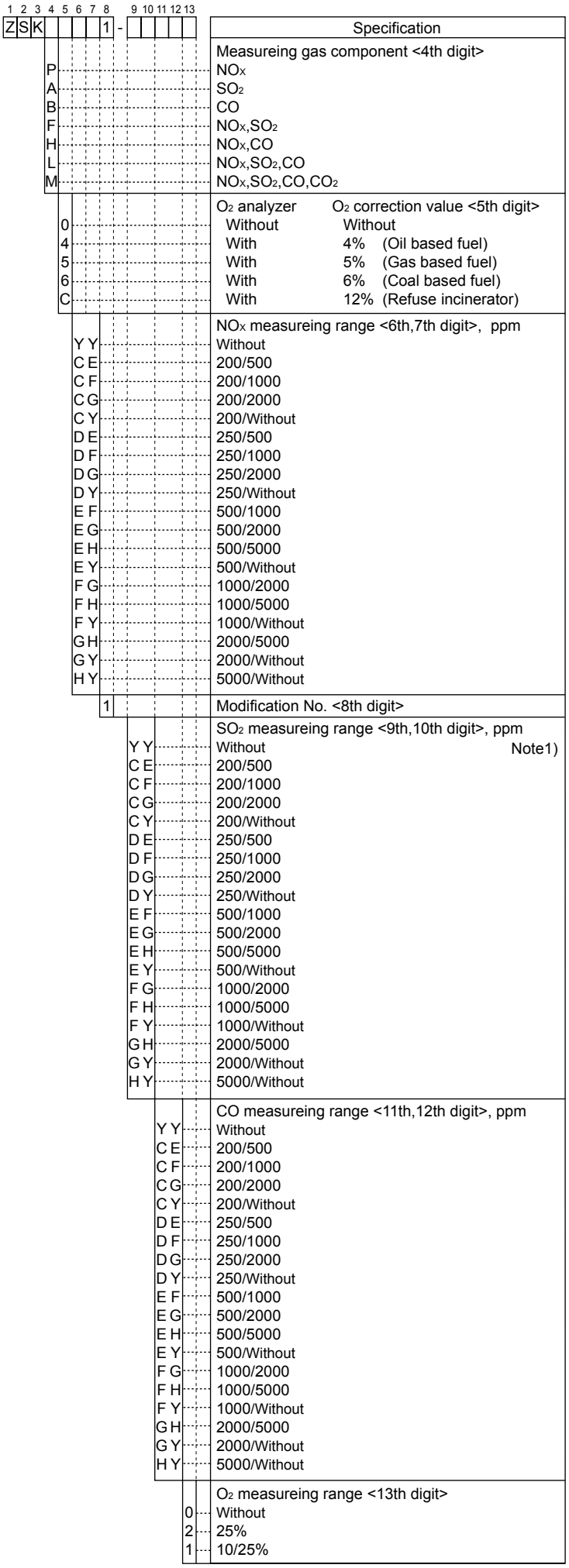
SCOPE OF DELIVERY

- Gas analyzer system
- Specified external drain separator/drain pot
- Specified gas extractor/probe set
- Specified gas inlet tube set
- Standard accessories

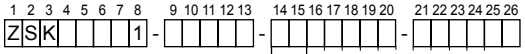
OPTIONAL ITEMS

1. Standard gas, pressure controller (Type ZSY)
2. Recorder (Fuji Electric's type PHR as required)
3. Measuring method test for each unit
4. Spare parts for one year (Type ZBN)
5. Waterproof gland at wiring port for outdoor use (A25A)
   Arrangement number 8641625
6. Anchor bolt

CODE SYMBOLS



Note1) Refer to page 7.



Specifications			
CO_2 measureing range <14th, 15th digit>			
YY	Without		
MN	10/20%		
MY	10/Without		
NY	20/Without		
Analog instantaneous insulation output <16th digit>			Note2)
	(Measuring component)	(Insulation output)	
Y	Each component	Without	
A	NO_X	Insulation	
B	SO_2	Insulation	
C	CO	Insulation	
D	NO_X,SO_2	Insulation	
E	NO_X,CO	Insulation	
F	NO_X,SO_2,CO	Insulation	
G	NO_X,SO_2,CO,CO_2	Insulation	
H	NO_X,O_2	Insulation	
J	SO_2,O_2	Insulation	
K	CO,O_2	Insulation	
L	NO_X,SO_2,O_2	Insulation	
M	NO_X,CO,O_2	Insulation	
N	NO_X,SO_2,CO,O_2	Insulation	
P	NO_X,SO_2,CO,CO_2,O_2	Insulation	
O_2 correction value insulating output <17th digit>			Note2)
	(Measuring component)	(Insulation output)	
0	Each component	Without	
1	NO_X	Insulation	
2	SO_2	Insulation	
3	CO	Insulation	
4	NO_X,SO_2	Insulation	
5	NO_X,CO	Insulation	
6	SO_2,CO	Insulation	
7	NO_X,SO_2,CO	Insulation	
O_2 correction avarage value insulating output <18th digit>			Note2)
	(Measuring component)	(Insulation output)	
0	Each component	Without	
1	NO_X	Insulation	
2	SO_2	Insulation	
3	CO	Insulation	
4	NO_X,SO_2	Insulation	
5	NO_X,CO	Insulation	
6	SO_2,CO	Insulation	
7	NO_X,SO_2,CO	Insulation	
	(Sample gas pressure)	(External drain separator) <19th digit>	
1	–1 to +5kPa	Without	
2	–3 to +3kPa	Without	
3	–5 to +1kPa	Without	
4	–1 to +5kPa	With	Note3)
5	–3 to +3kPa	With	Note3)
6	–5 to +1kPa	With	Note3)
Locker structure <20th digit>			
1	Indoor structure		Note4)
2	Outdoor structure		

Piping, wiring inlet <21th digit>				Note1)
(Piping)	(Wiring)	(External gas piping)	(Instrumentation air inlet)	
A	Upper left	Upper left	Without	Without
B	Upper left	Upper left	Without	Upper left
C	Upper left	Upper left	3 inlet on the lower left	Without
D	Upper left	Upper left	6 inlet on the lower left	Without
E	Upper left	Upper left	3 inlet on the lower left	Upper left
F	Upper left	Upper left	6 inlet on the lower left	Upper left

Ambient temperature <22th digit>	
2	Standard (–5 to 40°C)
3	Cold climate(–10 to 40°C)

Name plate	TAG plate	Display language <23th digit>	
A	Standard	Without	Japanese
B	Standard	With	Japanese
E	Standard	Without	English
F	Standard	With	English

Recorder <24th digit>			Note5)
0	Without		Note6)
1	With (6-point recording: recording data 1)		
2	With (6-point recording: recording data 2)		
3	With (6-point recording: recording data 3)	Separately purchase	
4	With (6-point recording: recording data 4)	recorder (Type PHR)	
5	With (6-point recording: recording data 5)		
6	With (6-point recording: recording data 6)		

Note1) to Note5) Refer to page 7.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

ZSK□□□□1-□□□□□-□□□□□□□□□□-□□□□□□-□□-□

	Contents
	Power supply <25th digit> Note6)
A	100V AC 50Hz
B	100V AC 60Hz
C	110V AC 50Hz
D	110V AC 60Hz
E	115V AC 50Hz
F	115V AC 60Hz
G	200V AC 50Hz
H	200V AC 60Hz
J	230V AC 50Hz
K	230V AC 60Hz
	Application <26th digit> Note1)
A	Refuse, industrial waste incineration, etc.
B	Gas boiler
C	Sludge incineration
D	Coal-oil boiler
	Measuring method test <27th digit>
Y	Without
A	NO_X
B	SO_2
C	CO
D	NO_X,SO_2
E	NOx,CO
F	NO_X,SO_2,CO
G	NO_X,O_2
H	SO_2,O_2
J	CO,O_2
K	NO_X,SO_2,O_2
L	NOx,CO,O_2
M	NO_X,SO_2,CO,O_2
	Zero gas <28th digit> Note7)
1	Instrumentation air
2	Atmospheric air
3	Standard gas ... Separately purchase standard gas (Type ZSY).

Gas extractor <29th digit>

	Extractor	Sampling tube material	Insertion length	Sampling point temperature
Y	Without	Without	Without	—
1	With	Without	Without	—
A	With	SUS316	300mm	800°C or lower
B	With	SUS316	400mm	800°C or lower
C	With	SUS316	600mm	800°C or lower
E	With	SUS316	800mm	800°C or lower
G	With	SUS316	1000mm	800°C or lower
H	With	SUS316	1200mm	800°C or lower
J	With	SUS316	1500mm	800°C or lower
K	With	SUS316	2000mm	800°C or lower
P	With	Titanium	600mm	1000°C or lower
Q	With	Titanium	800mm	1000°C or lower
R	With	Titanium	1000mm	1000°C or lower
D	With	SiC	700mm	1300°C or lower
F	With	SiC	900mm	1300°C or lower

	Sample inlet tube type	Length <30th digit>
Y	Without	Without
A	ϕ10/ϕ8mm Teflon tube	5m
B	ϕ10/ϕ8mm Teflon tube	10m
C	ϕ10/ϕ8mm Teflon tube	15m
D	ϕ10/ϕ8mm Teflon tube	20m
E	ϕ10/ϕ8mm Teflon tube	25m
F	ϕ10/ϕ8mm Teflon tube	30m
G	ϕ10/ϕ8mm Teflon tube	50m
H	Heating tube	10m
J	Heating tube	15m
K	Heating tube	20m
L	Heating tube	25m
M	Heating tube	30m
	Non standard specification <31th digit>	
Z	Other specification	

Note1) If 0-500ppm or higher is selected as SO_2 first range for the 9th and 10th digits, or code D is selected for the 26th digit, select code B, E, or F with instrumentation air for the 21st digit.

Note2) Only when “Without” is selected for all of the 16 to 19th digits, non-isolated output is allowed. Combination of isolated and non-isolated outputs is not allowed.

Note3) Specify this code when the downward inclination of the sample inlet tube from the gas extraction point to the analyzer gas inlet is less than 15°C or when moisture content of the sample gas is higher than 30%.

Note4) Special specification for cubicle structure
Specified as “Z” at the 20th digit only for cubicle materials, plate thickness, door with window, finished color, special coating film.

Note5) The contents to be recorded with a 6-point recorder are assigned and connected as specified in the above table for its delivery.
Recorder type: PHR
*Specify separately for other than those in the following table.

Note6) When 1 to 6 is set for the 24th digit, C to K cannot be selected for the 25th digit.

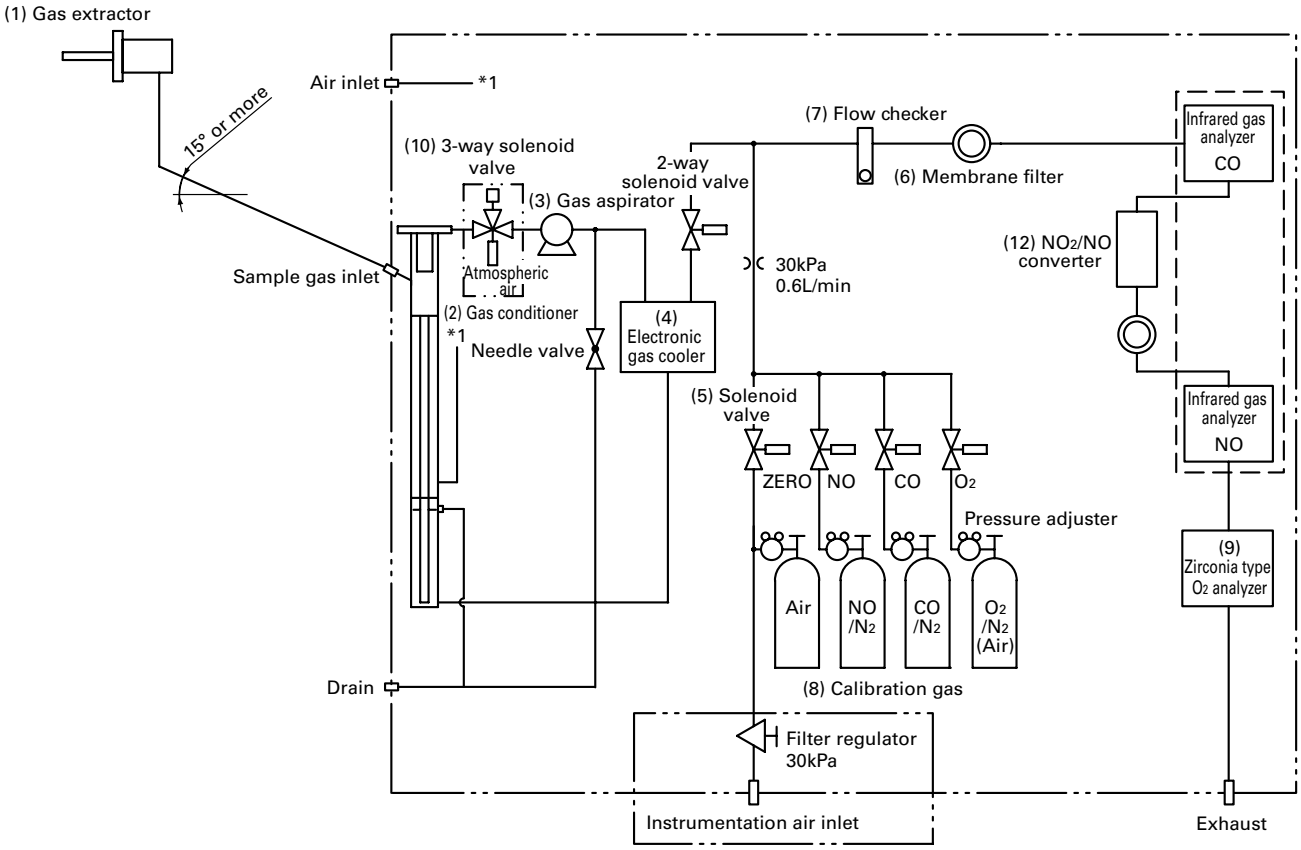
Note7) When the measurement method test or the CO_2 analyzer is provided, code 3 is specified.

Recording data	Code					
	1	2	3	1	2	3
NOx instantaneous value			○			○
NOx average value	○	○	○			○
NOx O_2 correction value			○			○
SO_2 instantaneous value			○		○	
SO_2 average value	○		○		○	
SO_2 O_2 correction value					○	
CO instantaneous value		○		○		
CO average value	○	○		○		
CO O_2 correction value				○		
O_2 instantaneous value	○	○	○	○	○	○
Combustion temperature	○	○		○		
Dust precipitator temperature	○	○		○		

<Specify when placing an order>
(1) Code symbols
(2) Written contents when TAG plate is provided

GAS SAMPLING SYSTEM DIAGRAM 1

(Refuse/industrial waste disposable incineration, SO_2 analyzer is not included)



Functions of Individual Components

(1) Gas extractor: Gas extraction, with heating type stainless steel filter having a standard diameter of 40μm

(2) Gas conditioner: Removes drain, mist and dust, and monitors the gas pressure.

(3) Gas aspirator: Aspirates sample gas (Flow rate of sample gas: Approx. 2L/min)

(4) Electronic gas cooler: Dries the moisture in the sample gas.

(5) Solenoid valve: Used for introducing calibration gas.

(6) Membrane filter: PTFE filter used to eliminate fine dust particles and permit monitoring of dust adhering condition on the gas analyzer.

(7) Flow checker: Controls and monitors the sample gas flow rate (it can be controlled by the separate needle valve.)

(8) Standard gas: Reference gas used for calibrating zero and span of the analyzer. Up to 6 gases (Zero gas air, span gas NOx, SO_2, CO, CO_2 and O_2) can be used.

(9) O_2 sensor: Used for measuring the oxygen concentration (0 to 25%) in sample gas.

(10) Atmospheric air solenoid valve: Can be built in for using the atmospheric air instead of standard air.

(11) Switching box: 6 power ON-OFF switches of the following equipments are built in.
- Gas aspirator
- Ventilator
- Fluorescent lamp and service outlet (Max. 2A)
- Electronic gas cooler, built-in recorder, and isolation signal converter
- Converter (at NOx measurement)
- Heater for the gas conditioner

(12) Converter: Added to NOx analyzer. A special catalyst material for efficient conversion of NO_2 gas to NO is used.

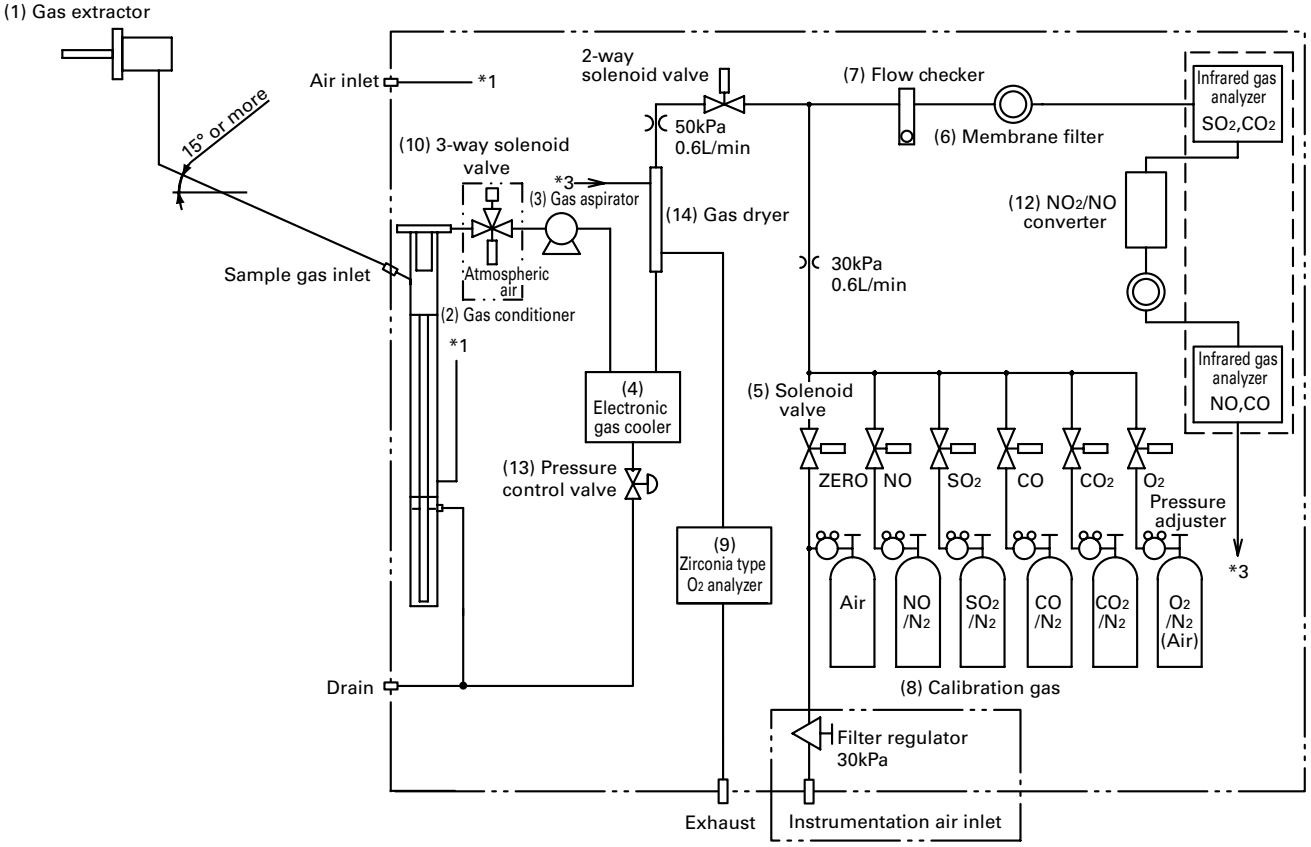
(13) Pressure control valve: Pressure adjustor to keep the sample gas pressure at a fixed level.

(14) Gas dryer: Semi-permeable membrane type dehumidifier to dry the moisture in the sample gas to dew point -15°C or less.

(15) Mist catcher: Removes sulfate mist in the sample gas. Replaced every 4 months when SO_3 concentration value is 30ppm. Added when SO_2 value is more than 0 to 500ppm or when oil/coal boiler is used.

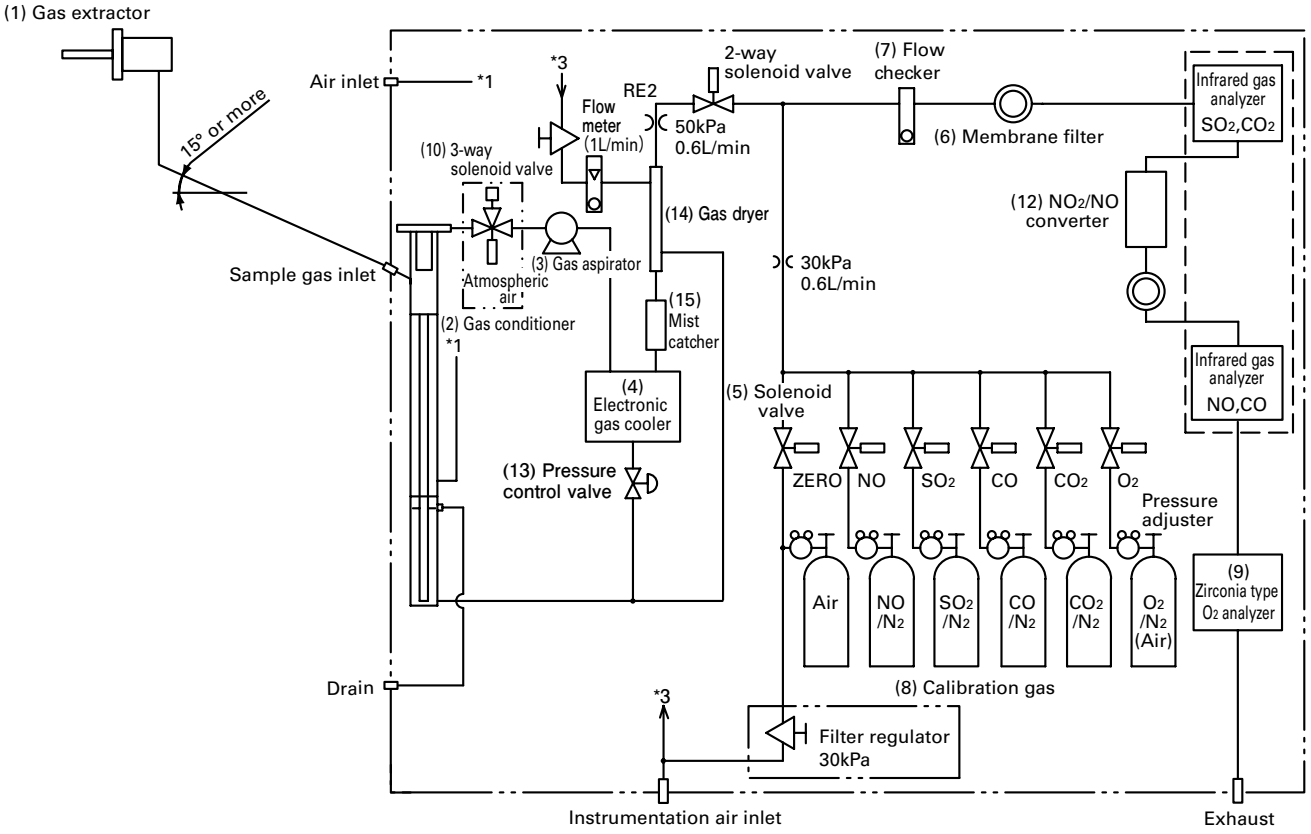
GAS SAMPLING SYSTEM DIAGRAM 2

(SO_2 measurement (first range 500 ppm or less), gas boiler or sludge incineration)

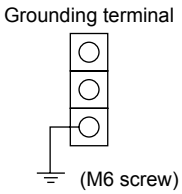


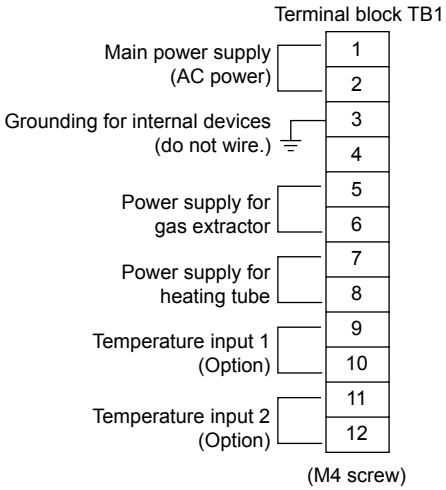
GAS SAMPLING SYSTEM DIAGRAM 3

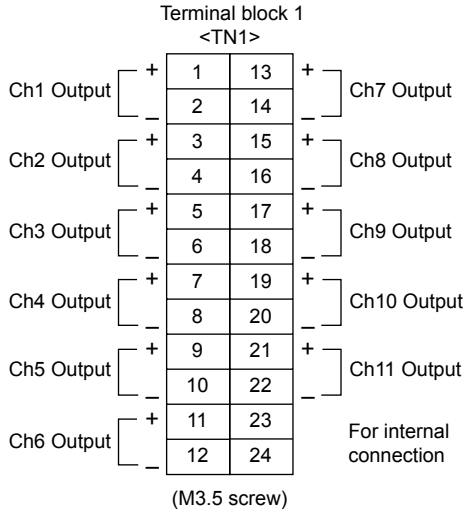
(SO_2 measurement (first range 500 ppm or higher), oil/coal boiler)

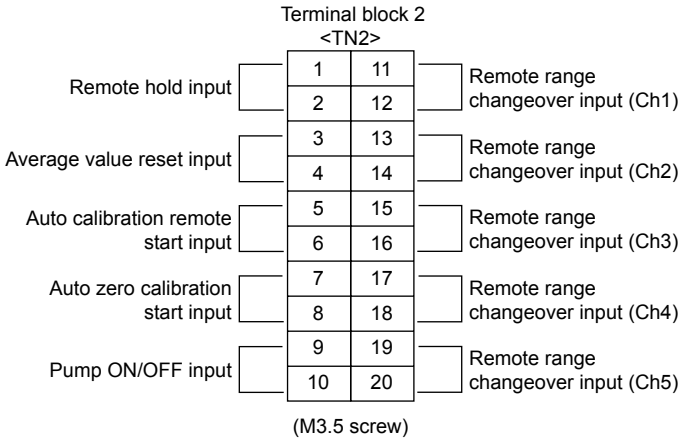


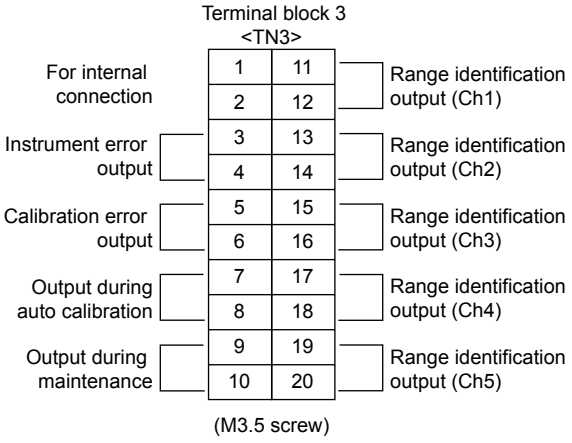
EXTERNAL TERMINAL DIAGRAM

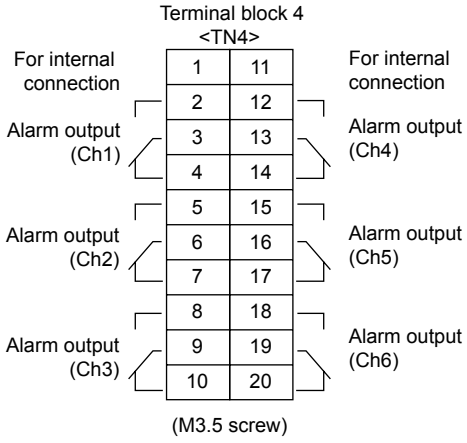












CORRESPONDENCE BETWEEN MEASUREMENT CHANNEL AND MEASURED VALUE

The contents of each output signal which corresponds to the code symbols are listed below.

Code symbols		Contents
4th digit	5th digit	
P	0	Ch1: NO_X
A	0	Ch1: SO_2
B	0	Ch1: CO
F	0	Ch1: NO_X, Ch2: SO_2
H	0	Ch1: NO_X, Ch2: CO
L	0	Ch1: NO_X, Ch2: SO_2, Ch3: CO
M	0	Ch1: NO_X, Ch2: SO_2, Ch3: CO_2, Ch4: CO
P	4 to C	Ch1: NO_X, Ch2: O_2, Ch3: Correction NO_X, Ch4: Correction NO_X Average
A	4 to C	Ch1: SO_2, Ch2: O_2, Ch3: Correction SO_2, Ch4: Correction SO_2 Average
B	4 to C	Ch1: CO, Ch2: O_2, Ch3: Correction CO, Ch4: Correction CO Average
F	4 to C	Ch1: NO_X, Ch2: SO_2, Ch3: O_2, Ch4: Correction NO_X, Ch5: Correction SO_2, Ch6: Correction NO_X Average, Ch7: Correction SO_2 Average
H	4 to C	Ch1: NO_X, Ch2: CO, Ch3: O_2, Ch4: Correction NO_X, Ch5: Correction CO, Ch6: Correction NO_X Average, Ch7: Correction CO Average
L	4 to C	Ch1: NO_X, Ch2: SO_2, Ch3: CO, Ch4: O_2, Ch5: Correction NO_X, Ch6: Correction SO_2, Ch7: Correction CO, Ch8: Correction NO_X Average, Ch9: Correction SO_2 Average, Ch10: Correction CO Average
M	4 to C	Ch1: NO_X, Ch2: SO_2, Ch3: CO_2, Ch4: CO, Ch5: O_2, Ch6: Correction NO_X, Ch7: Correction SO_2, Ch8: Correction CO, Ch9: Correction NO_X Average, Ch10: Correction SO_2 Average, Ch11: Correction CO Average

STANDARD ACCESSORIES

No	Name	Q'ty	Remarks
1	Teflon filter for membrane filter/spare (Teflon)	4	Provided with SO_2 analyzer
	Filter paper for membrane filter (25 sheets) /spare (Glass fiber)	1	Not provided with SO_2 analyzer
2	Joint for standard gas $Rc^1/_4$-ϕ6mm	1	
3	Hose band for fixing standard gas cylinder	1	
4	Toalon tube for standard gas connection 1m ϕ9/ϕ5mm	1	
5	Polyethylene tube for standard gas connection 6m ϕ6/ϕ4mm	1	
6	Anchor bolt for installing locker (Option) M12×160×50	4	
7	Water bottle for injection	1	
8	Flange packing for gas extractor	1	Provided with gas extractor
9	Mounting bolt and nut for gas extractor (M12×60mm)	1	
10	Support fixture for heating tube	1	Provided with heating tube
11	Instruction manual	1	

SPARE PARTS FOR ONE YEAR

- Teflon filter for membrane filter (4 sheets) × 1 (Note 1)
- O-ring for membrane filter (P49) × 2
- O-ring for membrane filter (P3) × 2
- Filter element for mist filter × 2
- O-ring for mist filter (G65) × 2
- Diaphragm for gas aspirator × 1
- Gas aspirator valve × 1
- Fuse (2A) × 2
- Fuse (3.2A) × 4
- Capillary for 50kPa/0.6L ×1
  .....Added in cases of SO_2 measurement (first range 0 – 550ppm or higher), gas boiler, sludge incineration, oil/coil boiler
- O-ring for gas extractor (G45) × 1
- O-ring for gas extractor (G50) × 1
- Wire gauze filter for gas extractor × 1
- Wire gauze filter packing for gas extractor × 1

  } Added when gas extractor is provided

- NO_2/NO converter catalyst × 1
- Glass wool for above
- Joint for above × 2

  } Added when NOx analyzer is provided

- Mist catcher × 3.....Added in cases of SO_2 measurement (first range 500ppm or higher) or oil/coal boiler

Note1) Provided with filter paper for membrane filter (25 sheets) x 1 for other than SO_2 analyzer.

CODE SYMBOLS FOR SPARE PARTS FOR ONE YEAR

1 2 3 4 5 6 7 8	Contents		
Z B N 1 S 2			
K	(Applications) Refuse incinerator, gas boiler		
1	Oil/coal boiler		
	(Gas extractor)	(NO_x analyzer)	(SO_2 analyzer)
0	Without	Without	Without
1	With	Without	Without
2	Without	With	Without
3	With	With	Without
A	Without	Without	With (500ppm or less)
B	With	Without	With (500ppm or less)
C	Without	With	With (500ppm or less)
D	With	With	With (500ppm or less)
E	Without	Without	With (500ppm or more)
F	With	Without	With (500ppm or more)
G	Without	With	With (500ppm or more)
H	With	With	With (500ppm or more)

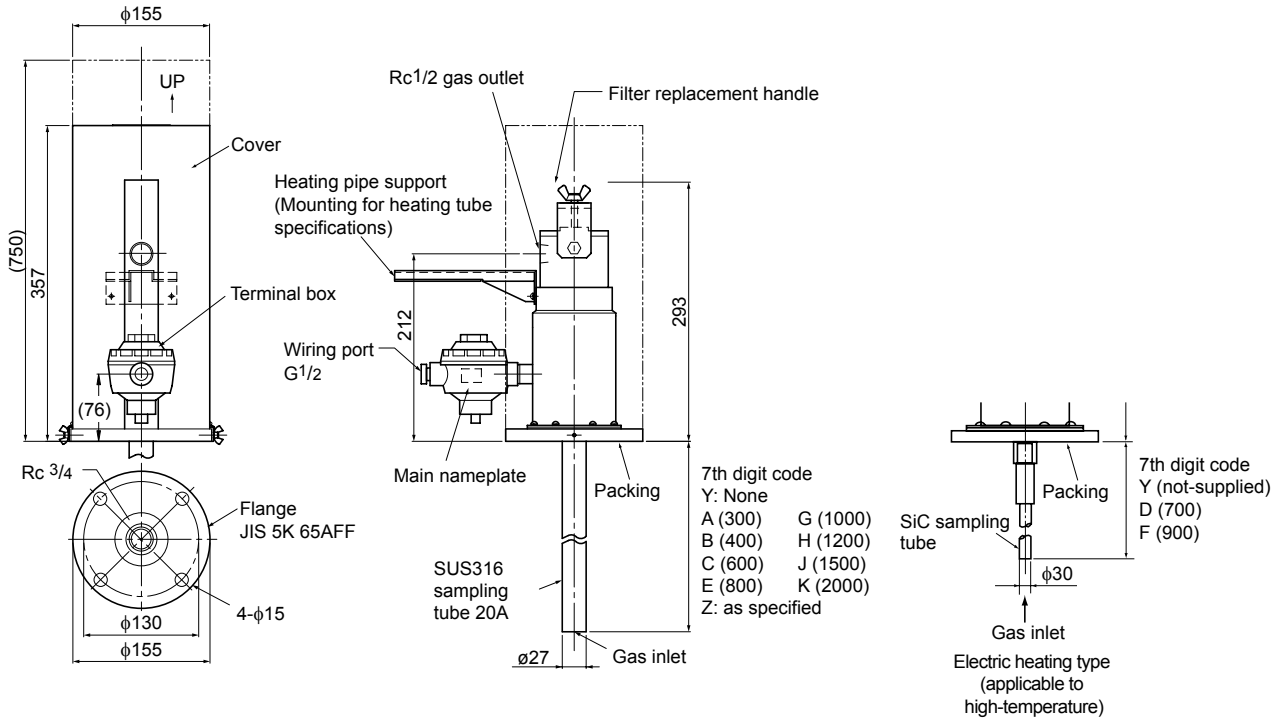
CODE SYMBOLS FOR STANDARD GAS/PRESSURE ADJUSTER

1	2	3	4	5	6	7	8		9	10	11	Contents
Z	S	Y					2	-				
												NO_X measureing 1st range (4th digit)
			0									Without
			2									200ppm
			3									250ppm
			4									500ppm
			5									1000ppm
			6									2000ppm
			7									5000ppm
												SO_2 measureing 1st range (5th digit)
				0								Without
				2								200ppm
				3								250ppm
				4								500ppm
				5								1000ppm
				6								2000ppm
				7								5000ppm
												CO measureing 1st range (6th digit)
					0							Without
					2							200ppm
					3							250ppm
					4							500ppm
					5							1000ppm
					6							2000ppm
					7							5000ppm
												CO_2 measureing 1st range (7th digit)
						Y						Without
						B						10%
						C						20%
												O_2 span gas (9th digit)
									0			Without
									1			1.8 to 2%O_2/N_2
												Zero gas (10th digit)
										Y		Without
										A		Air cylinder 3.4L (Not Tested)
										B		Air cylinder 3.4L (Tested)
										E		Air cylinder 10L (Not tested)*
										F		Air cylinder 10L (Tested)*
												Tested (11th digit)
											Y	Without
											A	NO_X analyzer
											B	SO_2 analyzer
											C	CO analyzer
											D	NO_X,SO_2 analyzer
											E	NO_X,CO analyzer
											F	NO_X,SO_2,CO analyzer
											G	NO_X,O_2 analyzer
											H	SO_2,O_2 analyzer
											J	CO,O_2 analyzer
											K	NO_X,SO_2,O_2 analyzer
											L	NO_X,CO,O_2 analyzer
											M	NO_X,SO_2,CO,O_2 analyzer

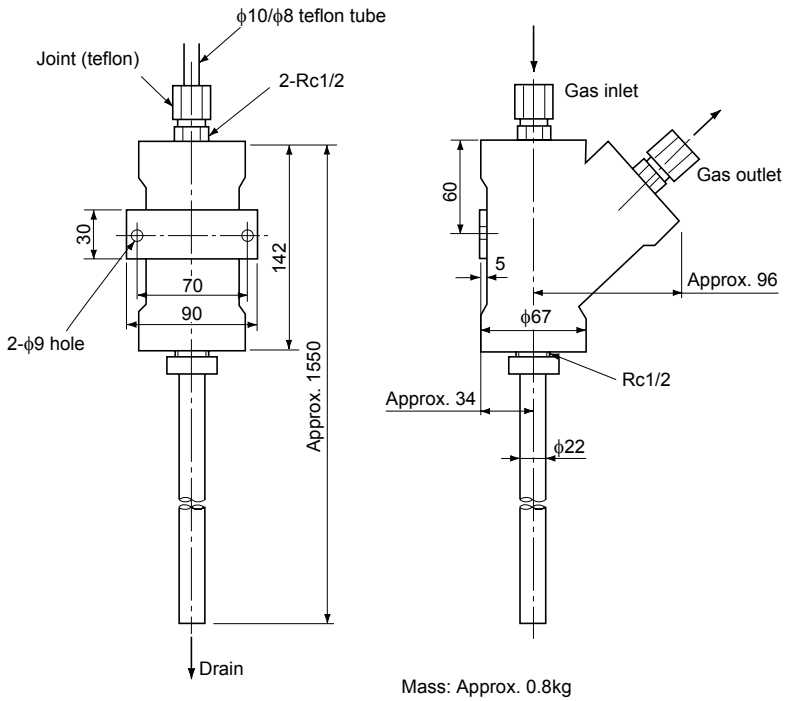
*Note) Range 0 to 500pm is included in zero gas, and 10L cylinder of code E, F is recommended to use when you perform auto zero calibration.

OUTLINE DIAGRAM (Unit : mm)

<Gas extractor>

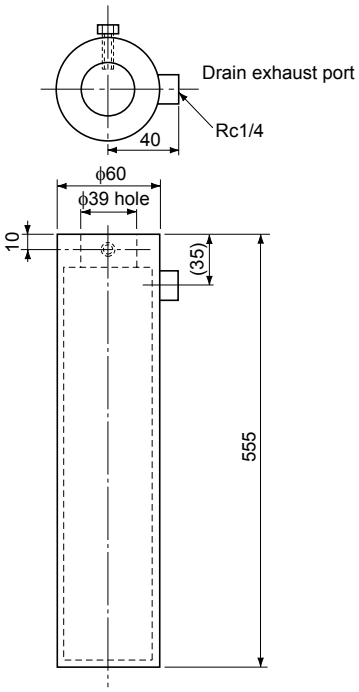


<Drain separator>



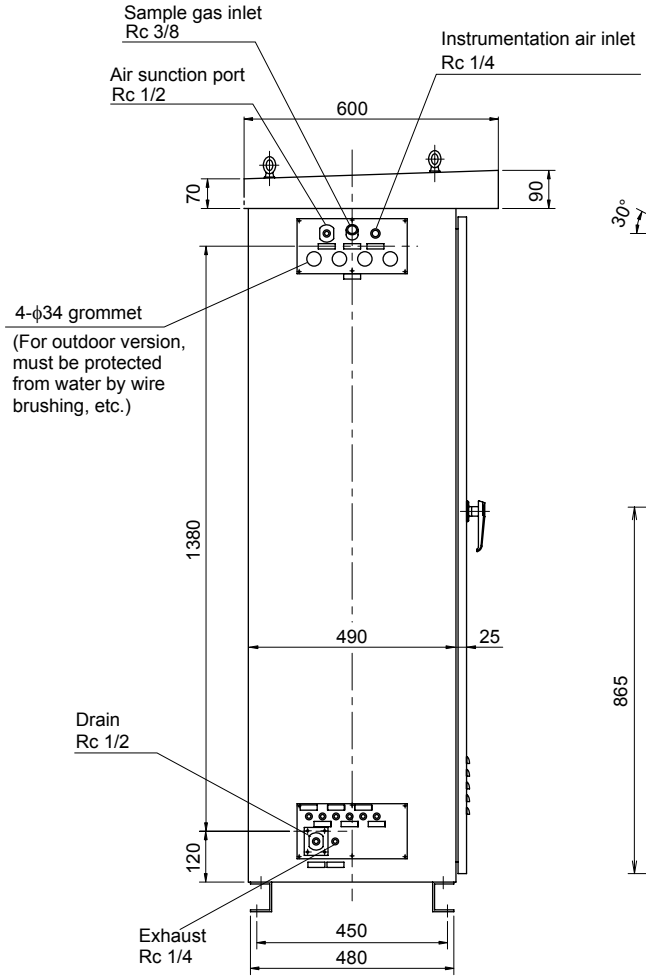
Mass: Approx. 0.8kg

<Drain pot>

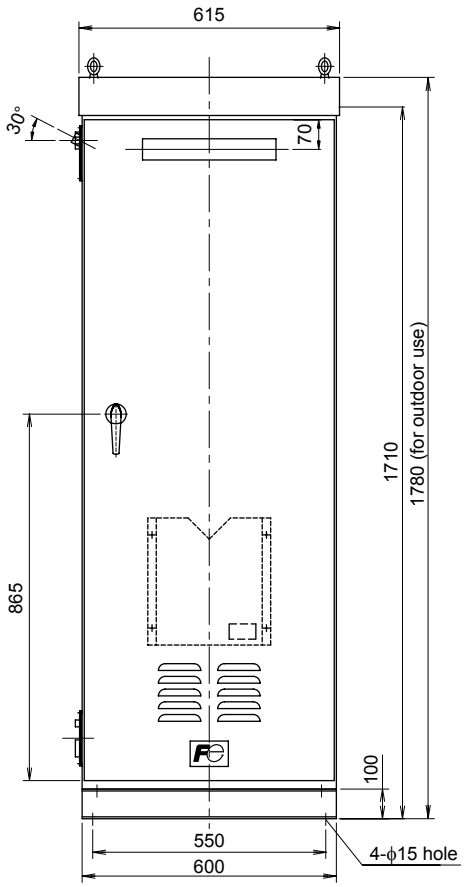


Mass: Approx. 0.8kg

OUTLINE DIAGRAM (Unit : mm)

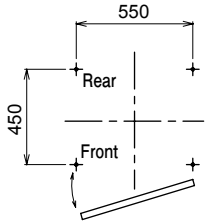


Left side view

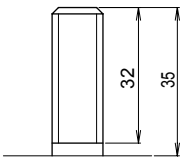


Front view

Anchor plan/door switching



Anchor bolt (option)
(4-M12×160×50)



⚠ Caution on Safety

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

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