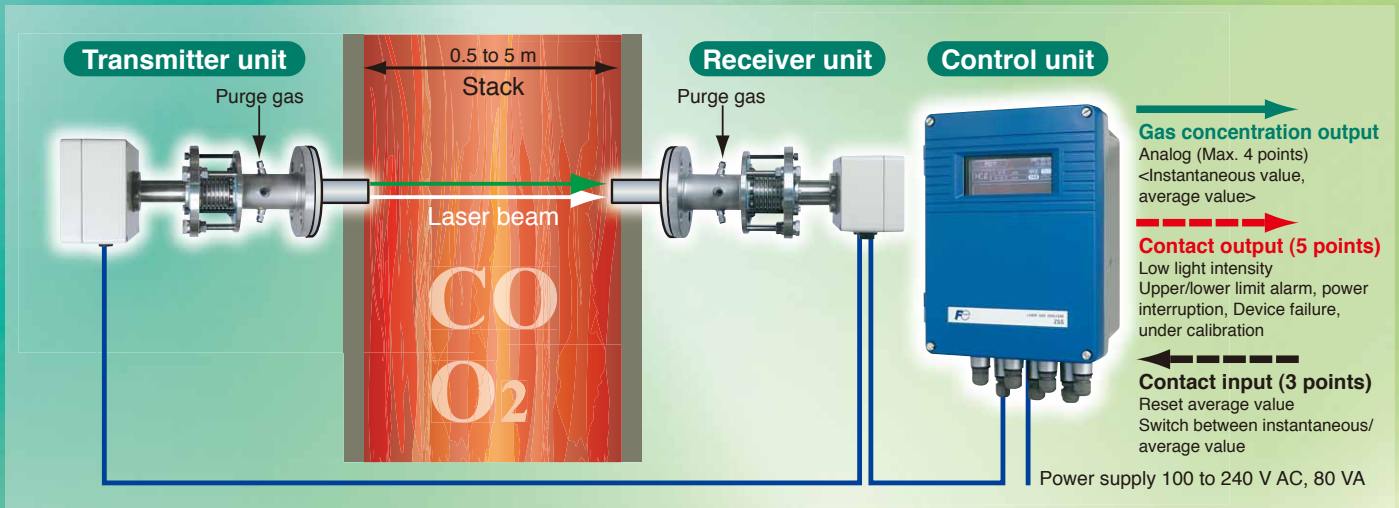


## Dual beam

# Laser CO + O<sub>2</sub> analyzer ZSS-6

**The world's first analyzer which can measure  
CO and O<sub>2</sub> with one unit!**



**One unit serves a double role**

**Continuous and simultaneous measurement of CO and O<sub>2</sub> concentration with one unit**

Only Fuji Electric offers the 2-component analyzer which can greatly reduce initial cost, installation cost, maintenance cost, etc.

**Fast response within 2 sec.**

**Fast response sensor enables you to control target gas effectively**

No gas sampling required. Quick response is achieved by direct measurement of process gas.

**Low power consumption  
Low maintenance**

**Saves energy and running cost**

Power consumption: max.80 VA, Maintenance cycle: twice a year

**Temperature up to 1200°C**

**High temperature and high dust tolerance**

**Air purge**

**Air purge can be used in O<sub>2</sub> measurement**

for combustion control

**Table 1**

	CO + O <sub>2</sub>	CO + O <sub>2</sub> High temperature	CO + O <sub>2</sub> Purge with instrument air
Temperature range	300°C or less	1200°C or less	400 to 1200°C
Purge gas	N <sub>2</sub>	N <sub>2</sub>	Instrument air
Measurement range (CO)	0 to 4 vol% ... 50 vol%	0 to 200 ppm ... 2 vol%	0 to 200 ppm ... 2 vol%
Measurement range (O <sub>2</sub> )	0 to 10 vol% ... 100 vol%	0 to 5 vol% ... 50 vol%	0 to 25 vol% ... 100 vol%
Application	Converter	Converter	Combustion furnace

Laser analyzers are appreciated for their low maintenance with extremely less moving parts and consumable parts.

Newly developed ZSS-6, capable of measuring CO and O<sub>2</sub> with one unit, offers better operability and less initial/running cost.

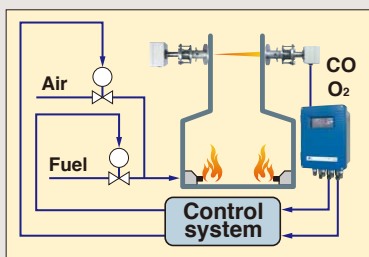
## Application examples

### Improving combustion efficiency

#### Location

Combustion management in refuse disposal plant

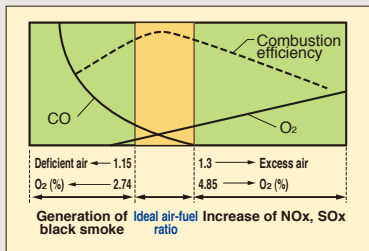
CO & O<sub>2</sub> combustion control system



#### Effect

Precise control of CO and O<sub>2</sub> to ensure ideal air-fuel ratio

Correlation between combustion efficiency and air-fuel ratio



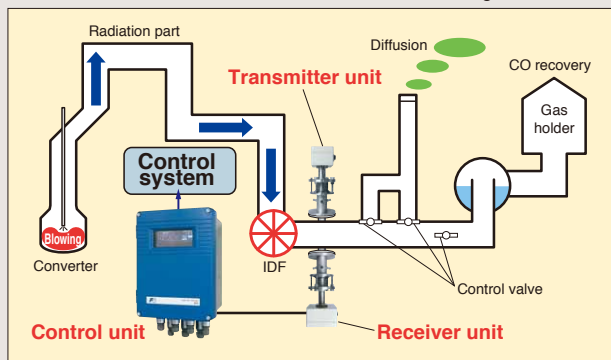
### Enhancing gas recovery efficiency

#### Location

around IDF

#### Effect

CO: Gas recovery rate enhanced  
O<sub>2</sub>: Leak monitoring



Combustible gas recovery system

## Specifications

### General

Principle	Non-dispersive infrared (NDIR)
Measurement range	See Table 1
Light source	Near-infrared semiconductor laser
Laser class	Class 1 (O <sub>2</sub> analyzers of high-temperature version and instrument air purge version fall under CLASS 3B)
Power supply voltage	100 to 240 V AC 50/60 Hz
Power consumption	Approx. 80 VA
Calibration interval	every 6 months (depending on the operating environment)
Display	Backlit LCD (on control unit)
Displayed contents	Measured component, concentration (instantaneous value, average, instantaneous/average CO value per standard O <sub>2</sub> concentration), alarm
Weight	Receiver unit and transmitter unit: approx. 10 kg each, control unit: approx. 8 kg
Structure	Outdoor type, dust and rain proof (IP65)

### Performance

Response speed	within 5 sec. (within 2 sec. for high-speed version)
Repeatability	±2.0% FS
Linearity	±3.0% FS
Zero drift	±4.0% FS
Interference from other gas	±2.0% FS

### Input/output signal

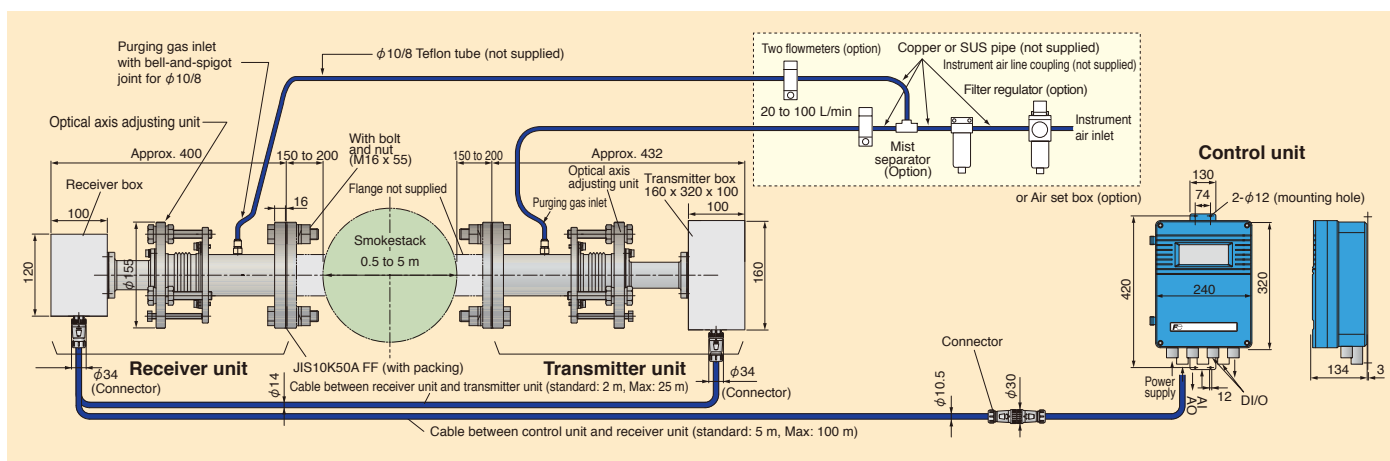
Analogue output	4 to 20 mA DC or 0 to 1 V DC 2 or 4 points (0 to 5 VDC, 1 to 5 VDC, 0 to 10 VDC are available) (Process value, O <sub>2</sub> correction value, average)
Analogue input	4 to 20 mA DC, 2 points (Measured gas pressure, temperature, velocity, O <sub>2</sub> concentration, moisture concentration, purge pressure) Concentration correction, O <sub>2</sub> correction, alarm output are performed according to input signals.
Contact output	Relay contact output, 5 points: low light intensity, out of upper/lower limits, device failure, during hold/during calibration, power interruption
Contact input (Option)	Photo coupler contact input, 3 points: average reset, switchover between instantaneous/moving average value, remote hold

### Installation environment

Operating temperature	-20 to +55°C (Receiver unit, transmitter unit) -5 to +45°C (Control unit)
Operating humidity	90% RH or less
Optical path length	0.5 to 5m
Mounting flange size	JIS 10K, 50A or 100A, or others
Purge gas	According to Table 1 (pressure 0.3 MPa or more)
Purge gas flow rate	20 L/min or more
Gas condition	Temperature: see Table 1 Moisture: 50 vol% or less (no condensation) Pressure: ±10 kPa (O <sub>2</sub> for air purge: -10 kPa to 100 kPa) Dust: 15 g/m <sup>3</sup> (N) or less. Consult us for use in dusty environments.

Conforms to JIS B 7993: Automated measuring systems for flue gas using non-extractive methods.

## Outline diagram (unit: mm)



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