

NDIR CO₂ CONTROLLER

DATASHEET
ZFP9-3

This is a non-dispersion type infrared CO₂ gas analyzer. It accurately measures the concentration of CO₂ gas in the air, indicates the result and simultaneously outputs an analog signal. Since upper and lower limit alarm functions are standard it can also be used as a controller.

This instrument is suitable for use as a CO₂ meter in green houses, building ventilation systems, CA (Controlled Atmosphere) storage facilities, and so on.

FEATURES

1. Use of high-performance infrared-ray system
2. Excellent stability and easy maintenance
3. Control with upper/lower limit alarm functions possible
4. Compact and lightweight (Approx. 3kg)
5. Conformity with the RoHS directive

SPECIFICATIONS

Functional specifications

Measuring system:

NDIR (non-dispersion infrared ray system)

Measured gas:

CO₂ in the air

Measuring range:

0 to 0.2%, 0 to 0.3%, 0 to 1%, 0 to 5%, 0 to 10%, 0 to 20% CO₂ (as specified)

Output signal:

4 to 20mA DC nonlinear (max. load resistance 350Ω) or 0 to 100mV DC nonlinear (output resistance 100Ω)
 Note) Linear output is available only for 0 to 0.2% range, 4 to 20mA DC or 0 to 100 mV DC.

Alarm function:

Alarm setting range: 0 to 100% FS

Setting method: set value display on indicator with internal upper/lower limit setting VR's

Output: relay contact (2 × 1c), 250V AC, 3A, or 30V DC, 3A (resistive load)

Alarm hysteresis width; ±4% of scale length (at 50% FS)

Indication: upper limit indicator lamp (red)

— lights up when CO₂ concentration exceeds upper limit. lower limit indicator lamp (red)

— lights up when CO₂ concentration is below the lower limit.

Indicator:

CO₂ concentration actual scale, moving coil type, JIS 2.5 class

Power supply:

100, 115, 200, 220V AC ±10%, 50/60Hz (as specified)

Power consumption:

Approx. 18VA

Ambient temperature:

0 to 40°C


Ambient humidity:

90% RH or less

Storage temperature:

-20 to 50°C

Sample gas temperature:

0 to 50°C

Gas sampling:

Aspirating pump (with power ON-OFF switch), membrane filter built in, sample gas flow rate approx. 0.6 L/min

Performance specifications

Repeatability:

±1% FS

Zero point drift:

Within ±10% for 6 months

Response time:

Within 10 seconds (for 90% response)

Warmup time:

Approx. 30 minutes

Linearity:

≤ ±3% FS (only for 0 to 0.2% range)

Structure and material

Enclosure:

Indoor dust-proof type

Case material:

Case cover (ABS resin), base plate (steel plate)

Surface color:

Case (Munsell 3.1Y7.0/1.1)

Lid (Munsell 9.2YR4/1)

Material of parts contacting gas:

SUS304, corrosion-resistant aluminum

Mounting:

Wall mounting

Outer dimensions (H x W x D):

257 × 220 × 85mm

Weight:

Approx. 3kg

Piping:

4.8mm dia. hose end (sample gas inlet)

Wiring:

M3 screw terminal

SCOPE OF DELIVERY

- CO₂ Controller ... 1 unit
- Filter paper ... 5 sheets
- Fuse (250V 2A T) ... 2 pcs
- Ferrite core ... 2 pcs

ITEMS TO BE ORDERED SEPARATELY

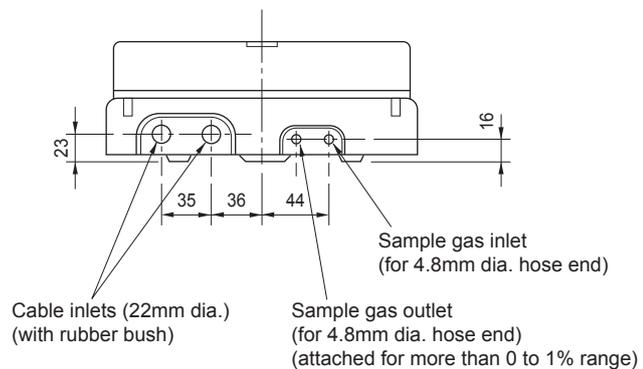
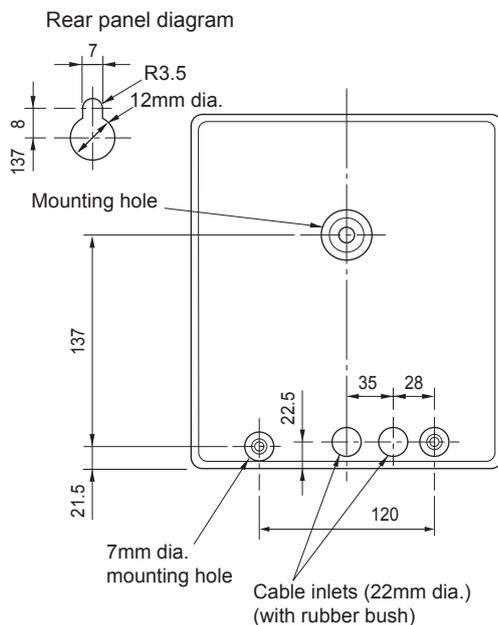
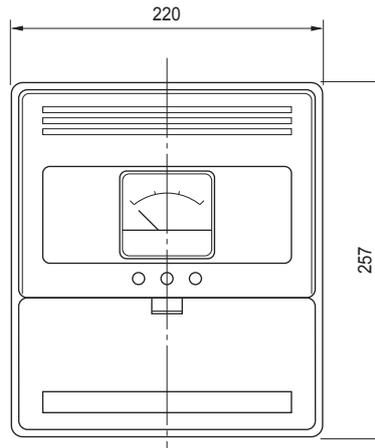
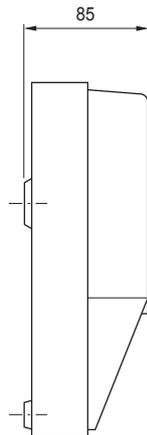
- Standard gas for zero/span calibration (type ZBM)
- Pressure regulator for standard gas (type ZBD6)
- Flowmeter for zero/span calibration (type ZBD4)
- Drain pot (type ZBH1)
- Drain separator (type ZBH8)

CODE SYMBOLS

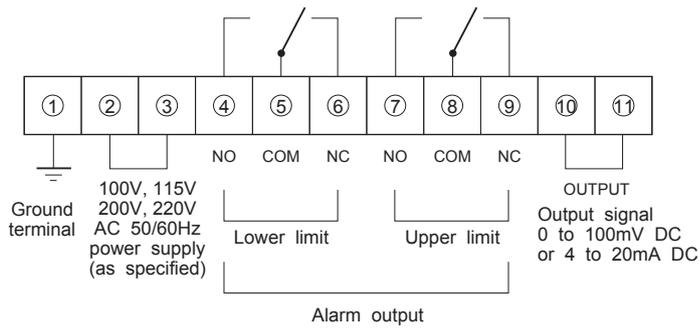
1	2	3	4	5	6	7	8	Description
Z	F	P	9				3	
A	-----							Measuring range
B	-----							0 to 0.3%
C	-----							0 to 1%
D	-----							0 to 5%
E	-----							0 to 10%
F	-----							0 to 20%
G	-----							0 to 0.2%
A	-----							Output signal
B	-----							0 to 100mV DC nonlinear
C	-----							4 to 20mA DC nonlinear
D	-----							0 to 100mV DC linear*
E	-----							4 to 20mA DC linear*
1	-----							Power supply
2	-----							100V AC 50/60Hz
4	-----							115V AC 50/60Hz
5	-----							220V AC 50/60Hz
	-----							200V AC 50/60Hz

* Linear output is available only for 0 to 0.2% range.
(5th code : G)

OUTLINE DIAGRAM (Unit: mm)



CONNECTION DIAGRAM



Lower limit alarm: 4–5 become conductive when CO₂ concentration in sample gas drops below set value, while 5–6 become conductive when concentration exceeds set value.

Upper limit alarm: 8–9 become conductive when CO₂ concentration in sample gas drops below set value, while 7–8 become conductive when concentration exceeds set value.

CAUTIONS ON WIRING

Use vinyl insulated cable with a cross-sectional area of 1.25mm² or more for the power supply and alarm contact output.

Use two-core shielded cable for the output signal cable in order to avoid the influence of inductive noise.

Be sure to connect shielded wires to the ground terminal.

Keep the output signal cable away from the power line and alarm contact output line.

Add the provided ferrite core to each of output signal line, and alarm output line.

EU Directive Compliance 

LVD (2014/35/EU)

EN 61010-1

EN 62311

EMC (2014/30/EU)

EN 61326-1 (Table 1)

EN 55011 (Group 1 Class A)

EN 61000-3-2 (Class A)

EN 61000-3-3

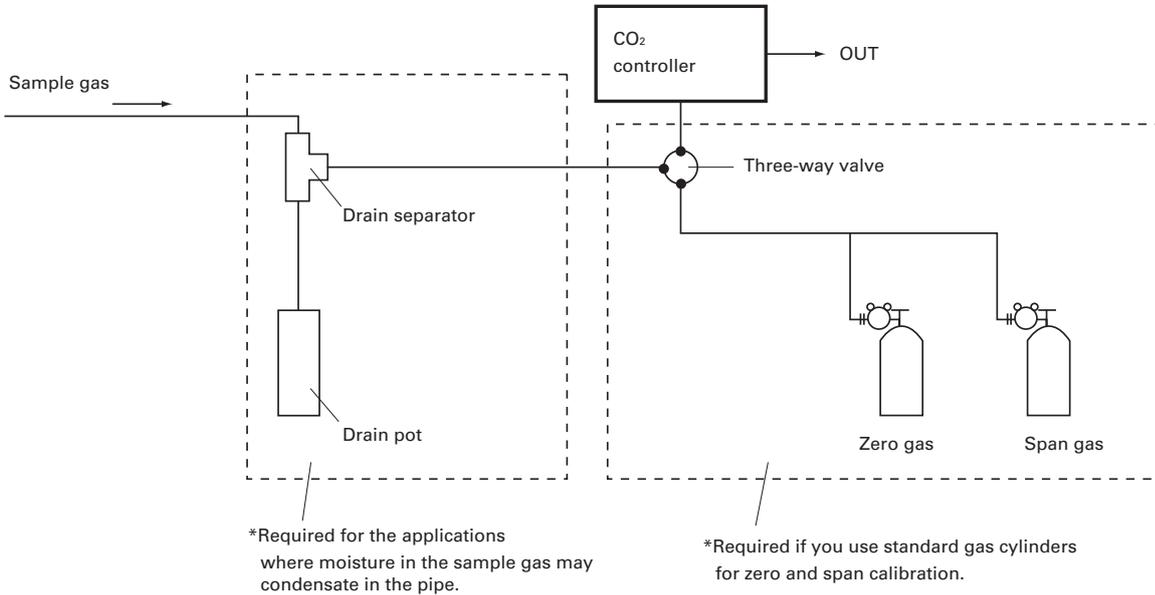
EN 61326-2-3

RoHS (2011/65/EU)

EN 50581

Sampling system configuration example

*Sampling system is not required for the measurement of atmospheric gas.



⚠ Caution on Safety

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

Information in this catalog is subject to change without notice.

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