



## INSTRUCTION MANUAL

# NO<sub>2</sub> / NO Converter Model: ZDL03

INZ-TN1ZDL03c-E

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### Preface

We thank you very much for purchasing Fuji's NO<sub>2</sub>/NO Converter.

- Please read this instruction manual thoroughly before installing, using and applying maintenance this device. Damage or accident may be caused when mishandled.
- Specification of this NO<sub>2</sub>/NO converter may alter without notice for modification.
- Do not remodel or modify this NO<sub>2</sub>/NO converter without the manufacturer's permission. Fuji Electric will not accept any liability whatsoever for any trouble or accident caused by such modification.
- Operator of the NO<sub>2</sub>/NO converter should keep this instruction manual.
- Operator should keep this instruction manual near at hand at all times, after thoroughly reading it.

### Safety precautions

Please read the safety precautions written as bellow before use, for correct use of the converter.

Please observe cautions stated bellow, for it contains important information on safety.



### CAUTION

Precautions under this mark is stated when wrong handling may cause hazardous situation. Possibility of Medium level damage or injury, and physical damage is predicted.



### CAUTION

- Installation, wiring and piping should be carried out by professionals or suppliers. Incomplete installation may cause fall of the device, electric shock or fire.
- Gas analyzer should be turned OFF when wiring, maintenance or inspection is carried out. This is to prevent electric shock and injury.
- Use wires with proper wire rods and diameters that meets this device. Wrong ones may cause electric shock or fire.
- Do not insert metal rod or fingers to the power supply terminal. It may cause electric shock.
- Remove any metal objects such as wristwatch while operating maintenance or inspection. It may cause electric shock.
- Use pipes with proper material and joints stated in the instruction manual. It may cause gas leakage.
- Use replacement parts that are specified by the manufacturer. Otherwise, it may cause malfunction, electric shock or gas leakage.
- Do not touch the converter section, due to high temperature. Wear protective gloves while exchanging catalyst. It may cause burn injury.

## 1. Overview

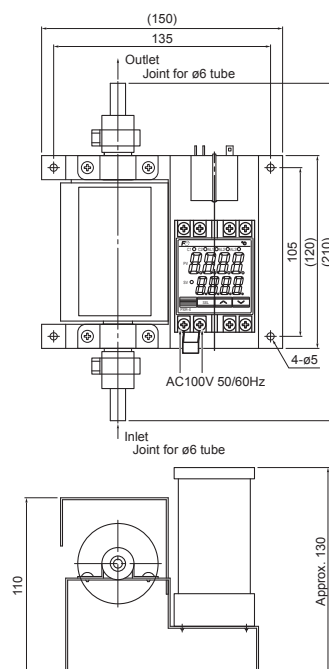
The NO<sub>2</sub>/NO converter is to be coupled with a NO<sub>x</sub> gas analyzer or NH<sub>3</sub> gas analyzer for flue exhaust. It is converter using a special catalyst which efficiently converts NO<sub>2</sub> in sample gas to NO.

## 2. Major Specifications

Catalyst	: Carbon, replacement, required every 8 months (when NO <sub>2</sub> concentration is 10 ppm or lower)
Gas flow rate	: About 0.5L/min.
Set temperature	: 220±10°C
Thermocouple	: K
Power supply	: 100V AC, 50/60Hz
Power consumption	: About 85VA
Materials of gas-contacting parts	: ceramic, viton glass wool, 316SS
Gas inlet/outlet connection method:	Insert Teflon tube ø6 mm/ø4 mm into Viton connection port of inner diameter ø5.5 mm. (Withstand pressure: 10 kPa)

## 3. Outline Drawing

This gas converter is composed of the converter block and the temperature regulator block.



MASS APPROX. 1 kg

Fig. 1 Outline drawing

## 4. Installation, Piping, Wiring

- (1) The main frame should be installed vertically to the ground. Avoid installing it obliquely or laying it on its side.
- (2) Pipes should be connected so that the bottom port of converter block becomes an inlet and the top port becomes an outlet. (Refer to “3. Outline Drawing.”)
- (3) Connect power supply to the terminals indicated in the wiring diagram. (Use type D for grounding.)
- (4) A Breaker should be installed near the Converter where an operator can access it.
- (5) Confirm the piping and wiring before turning ON the converter.
- (6) Be careful of the high temperature after turning the power on. The temperature regulator (\*) is set at 220°C. Since temperature has been factory-set, the temperature regulator need not be operated.

- (\*) Setting of temperature controller for NO<sub>2</sub>/NO converter (PXR4TCS1-0Y13X).
- (a) Under SV (Set Value) display, set 220°C by pressing the  $\square$  or  $\square$  key and determine it by the  $\square$  key. (200°C need be set for NO/CO analyzer.)
  - (b) Run automatic tuning when temperature is unstable.
  - (c) The temperature controller controls converter temperature through the SSR relay.

## 5. How to Replace Catalyst

Catalyst and filter should be replaced with new ones once every eight months. (when flow rate is 0.5L/min or lower



During catalyst replacement, carefully protect your body from a burn because the converter block is hot.

and NO<sub>2</sub> concentration is 10 ppm or lower)

- (1) Turn off the main power supply for converter.
  - (2) Remove cover when it has cooled down. The cover is fastened by the screws on the side face.
  - (3) Next, remove One touch band from the upper joint (1) shown in Fig. 2 with a pair of pliers or other apparatus. the lower joint (5) can be easily removed by shifting it gradually with a blade-edge screwdriver. Attention should be paid not to damage the ceramic heater.
  - (4) Pull out the metal fitting plates (2).
- [CAUTION] Place a catch pan or sort to receive the falling catalyst (3) and glass wools (4).

- (5) Place (4) at the end of metal fitting plate (long) (2), insert it from the lower side of the ceramic heater, then inject the new (3) from the top, using a funnel or alike.
- (6) Attach new joints (1) and (5) to the heater and reconnect it to piping, then fasten all the straps of the bands. Turn ON the power supply.

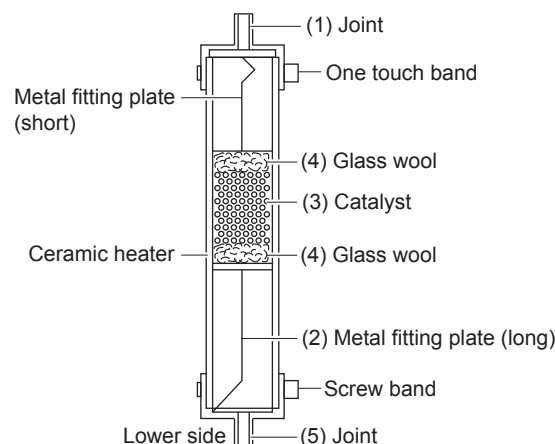


Fig. 2 Replacement of catalyst

## 6. Scope of Delivery

- (1) Main unit
- (2) NO<sub>2</sub>/NO catalyst (already set into the main unit)
- (3) Glass wool (already set into the main unit)

## 7. Spare parts

	Q'ty	Item No.
(1) NO <sub>2</sub> /NO catalyst	1	TK726891C1
(2) Glass wool (0.3 to 0.5 g)	1	TK726890C1
(3) Joint	2	TK7G6890P1