



NO₂ / NO Converter

Model: ZDL05

INZ-TN1ZDL05-E

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Preface

We thank you very much for purchasing Fuji's NO₂/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 NO₂/NO converter may alter without notice for modification.
- Do not remodel or modify this NO₂/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 NO₂/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 NO₂/NO converter is to be coupled with a NO_x gas analyzer or NH₃ gas analyzer for flue exhaust. It is converter using a special catalyst which efficiently converts NO₂ in sample gas to NO.

2. Major Specifications

Catalyst	: Carbon, replacement, required every 8 months (when NO ₂ concentration is 10 ppm or lower)
Gas flow rate	: About 0.5L/min.
Set temperature	: 220±10°C
Thermocouple	: K
Power supply	: 100 to 240V AC, 50/60Hz
Power consumption	: About 85VA
Altitude	: Up to 2,000 m
Installation category	: II
Pollution Degree	: 2
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)
Contact output	: for temperature alarm SPST-NC contact, 220 V AC / 30 V DC, 1A (resistive load)

3. Outline Drawing

This gas converter is composed of the converter and the temperature controller.

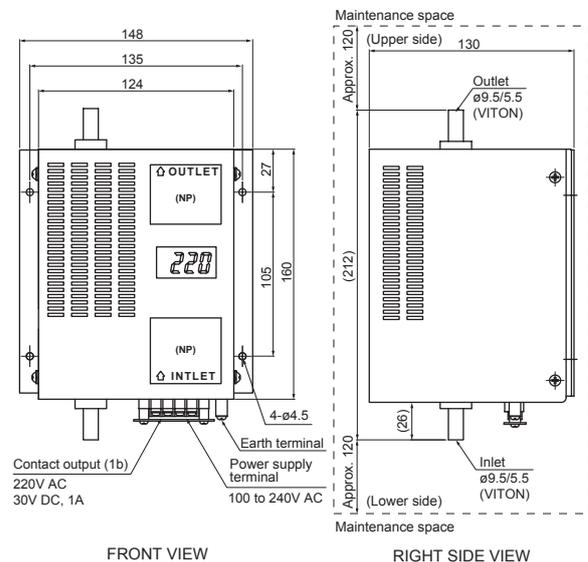


Fig. 1 Outline drawing

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 that meet IEC60947-1 and IEC60947-3 should be included in installation.
 - (5) A Breaker should be installed near the Converter where an operator can access it.
 - (6) Confirm the piping and wiring before turning ON the converter.
 - (7) Be careful of the high temperature after turning the power on. The temperature controller (*) is set at 220°C. Since temperature has been factory-set, the temperature controller need not be operated.
 - (8) When the temperature reaches $\pm 20^{\circ}\text{C}$ from the setpoint of the temperature controller, the contact is opened.
- (*) Temperature controller for NO₂/NO converter (PXE4TAY1-0Y000).

5. How to Replace Catalyst

CAUTION

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

Catalyst should be replaced with new ones once every eight months. (when flow rate is 0.5L/min or lower and NO₂ 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) By using a pair of pliers or the like, loosen and remove the spring clamps on the joint (1) and the joint (5). Then, remove the two joints. Be careful 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 then put on the spring clamps on both joints.
- (7) Connect only the lower joint (5) to the pipe. Turn on the power and then flow the zero gas through the pipe manually, for about 20 minutes. (This is to remove moisture from the catalyst.)
- (8) Connect the upper joint (1) to the pipe.

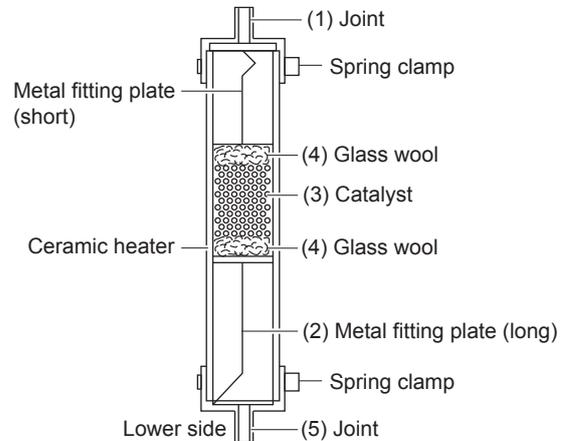


Fig. 2 Replacement of catalyst

6. Scope of Delivery

- (1) Main unit
- (2) NO₂/NO catalyst (already set into the main unit)
- (3) Glass wool (already set into the main unit)

7. Consumables

	Q'ty	Item No.
(1) NO ₂ /NO catalyst	2	TK726891C1
(2) Glass wool (0.3 to 0.5 g)	2	TK726890C1
(3) Joint	4	TK7G6890P1

8. Compatible Standards

- (1) Product safety : EN61010-1: 2010
- (2) EMC : EN61326-1: 2013