

## INSTRUCTION MANUAL

COPULING ADAPTOR CA-806

MODEL 15-00007A

NOISE LABORATORY CO., LTD

Edition 1.04

AEB00314-00E-0E

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### 1. IMPORTANT SAFETY PRECAUTIONS

Thoroughly read the following important safety precautions prior to use.

- This unit cannot be used in a fire prohibited area or other explosive areas. If used in such an area, this unit is liable to cause combustion or ignition due to electric discharge etc.**
- A person having a pace maker or other electronic medical device implanted into or connected to his or her body should not operate this unit and also should not enter the test area while this unit is operated.**
- Be careful of an electric shock hazard being caused by exposure to generated pulses or to the EUT power.**
- Do not drop or give strong shock to the unit.**
- Safety recommendations are listed in Section 3. Thoroughly read these precautions before carrying out test a set-up, connection or test execution.**

### 2. INTRODUCTION

Thank you very much for your purchase of this product.

The Coupling Adaptor CA-806 has been developed to inductively couple the high voltages pulses from the INS or FNS series simulators into cables under test without direction connection to the conductor of interest.

- This operation manual describes the function, operation and safety precautions for CA-806.
- Thoroughly read this operation manual before use and keep it as a ready reference.

#### § Features

- Connected to the INS or FNS series simulators, the CA-806 Coupling Adaptor couples the generated pulses onto cables under test (interconnecting, AC or DC power, grounding) for immunity test purpose without direct connection to them.
- Accommodates a lead of up to 27mm diameter.
- A 50 ohm terminator is built-in.
- 10:1 coupling ratio.

### 3. BASIC PRECAUTIONS FOR SAFETY IN USE OF THIS UNIT

#### Basic safety precautions

- This unit cannot be used in a fire prohibited area or other explosive areas. If used in such an area, this unit is liable to cause combustion or ignition due to electric discharge etc.
- A person having a pace maker or other electronic medical device implanted into or connected to his or her body should not operate this unit and also should not enter the test area while this unit is operated.
- Our company and its distributors/agents shall have no liability for any injury or damage resulting from careless operation of this unit and any resultant damage or loss. [Precautions for human body, operation, environment and connection]
- Mishandling or careless operation may result in serious injury. [Precautions for human body, operation, environment and connection]
- For sure and safe operation, use accessories or options supplied from our company.
- Any unnecessary cable shall not be connected. Wrong connections may cause damage to this unit. [Precautions for human body and connection]
- Be extremely careful of an electric shock due to the generated pulses

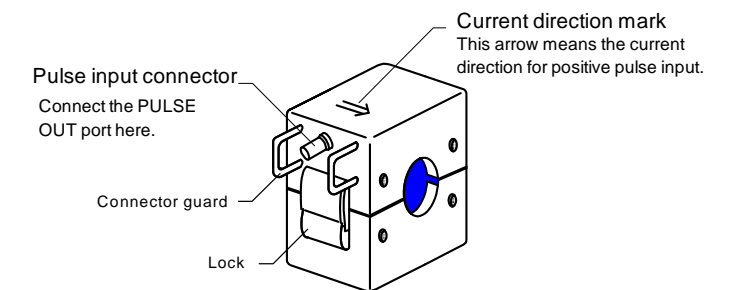
and power supply to EUT. [Precautions for human body and connection]

- Before connecting this unit to a high voltage pulse generator, turn off the high voltage circuitry beforehand. Otherwise, the operator may receive an electric shock due to the generated high voltage pulses. [Precautions for human body and connection]
- Fully insert the coaxial connector and turn it clockwise until a click is heard to make connection securely. [Precautions for human body and connection]
- During test, high level of electromagnetic radiation may be generated depending on the type or nature of the EUT and thus causing interference with nearby electronic equipment and radio communication equipment. In such case, the user may have to take measures such as a faraday cage, shielded room, shielded cable and so on. [Precaution for environments]
- If condensation is found, fully dry the unit before operating it, otherwise, the unit may be damaged or only exhibit limited performance. [Precautions for environments]
- Do not use nor keep the unit in a humid or dusty environment [Precaution for environments]
- Do not drop the unit or do not give strong shock to the unit. [Precaution for handling]
- Do not wipe off the body and peripheral equipment with thinner, alcohol or other solvent. When the unit is dirty, soak a cloth in a detergent, wring it and wipe the unit with this cloth. Using solvents may spoil the appearance. [Precautions for handling]
- Only a service engineer authorized by our company should perform repair, maintenance work and internal adjustment. [Precaution for handling and safety]
- The output of the simulator (either INS or FNS) shall not be set to over 2000V. A higher voltage setting may cause damage to this unit.
- This unit shall be connected to the INS simulator without EUT line input connection and without EUT line coupling connection. The enclosure of this unit is connected to the outer conductor of the HV coaxial connector. This may cause an electric shock when the INS simulator is set for normal mode (for EUT power line) coupling, as the outer side of PULSE OUT port may have been connected to a line (phase) of the mains. [Precaution for handling and safety]

### 4. SPECIFICATIONS

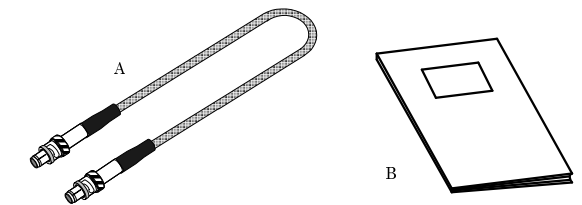
| Parameters                                 | Specifications                         |
|--|--|
| Principle                                  | Inductive coupling                     |
| Input voltage                              | 2000 V max                             |
| Input pulse width                          | 50 ns ~ 1000 ns                        |
| Coupling ratio                             | (1/10 +/-10%) of input                 |
| Termination                                | A 50 ohm terminator built-in           |
| Storage temperature                        | -5 to 55 °C                            |
| Operation temperature                      | 15 to 35 °C                            |
| Relative humidity, operating               | 25 to 75%                              |
| Maximum diameter of the cable to be tested | 27 mm                                  |
| Dimensions                                 | 89 x 64 x 120 mm (projection included) |
| Weight                                     | Approx. 1 kg                           |

### 5. MAIN UNIT



### 6. INCLUDED ACCESSORIES

This product includes the following items.



A : Connection cable NMHV(P)-NMHV(P) .... 1pc.

B : Instruction manual ..... 1pc.

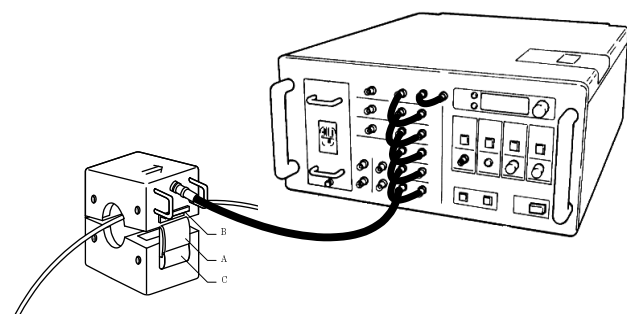
### 7. OPERATION

- Connection to a pulse generator  
Connect the Input connector of this unit to the PULSE OUT connector of Impulse Noise Simulator (Models: INS series) or Fast Transient Noise Simulators (Models: FNS series) by using the supplied coaxial cable. Some models require an optional conversion cable.

#### Cautions:

- Use appropriate connectors (cable).  
Use optional cables for the following models:)  
① INS-AX, INS-AX2, INS-400L, INS-4001, INS-4020/4040, INS-4300 series.  
The cable supplied with this unit can be used.
- ② INS-410, 420 and 420A  
Additionally, use conversion cable 02-000034A.
- ③ INS-4400 series  
Use an optional 02-00002A cable instead of the supplied cable.

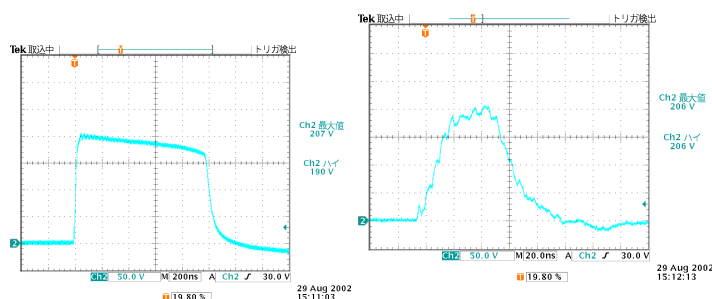
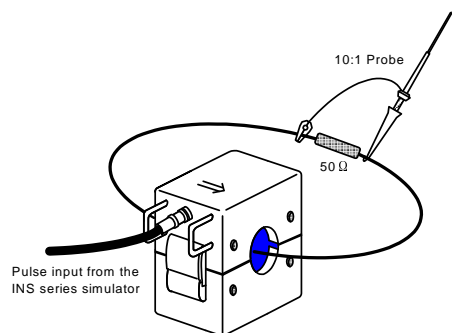
- Cable clamping  
Loosen the rock and open the clamp and clamp this unit around the test conductor and fasten the lock. In this instance, check to see that the clamp part has been securely closed and then lock it. If it has not been completely locked, the unit cannot exhibit normal performance.
- Perform a test with the desired pulse width and peak voltage setting. (Maximum allowable input 2000V)



\* With 1kV or higher input, the unit may vibrate and generate sounds due to that but this is a normal behavior of this unit.

## 8. PERFORMANCE CHECK

Make a wire loop including a 50-ohm resistor (select one with good high frequency characteristics) and clamp the loop. Care shall be taken so that the loop is horizontally positioned and forms a circle and the loop lets through the center of the clamp aperture.



Input voltage: 2 kV  
Pulse width: 1000 ns  
Load: 50 ohm  
V: 50 V/div  
H: 200 ns/div

Input voltage: 2 kV  
Pulse width: 50 ns  
Load: 50 ohm  
V: 50 V/div  
H: 10 ns/div

## 9. WARRANTY

### Servicing terms

The following terms are applicable to servicing by Noise Laboratory Co., Ltd., (hereafter referred to as the Company) provided to maintain the intended performance of its products.

#### 1. Scope

The following terms shall apply only to products made by the Company.

#### 2. Technical servicing fee

In the event of a failure of a product within the warranty period (see warranty section), the Company will repair a product without charge. After the warranty expires, repairs will be billed at a nominal cost.

#### 3. Ownership of defective parts

Any defective part exchanged under the Company's servicing belongs to it.

#### 4. Limited liability

In the event that damages resulting from servicing by the Company are intentional or caused by negligence, the Company will pay the cost but at the purchase value of the relevant product maximum. But, notwithstanding the foregoing, the Company shall not be responsible for any incidental or consequential damages of any nature, including without limitation thereof loss of would-be profit or compensation demanded from a third party

#### 5. Refusal to offer servicing

The company may not accept a repair order in the following cases:

- More than 5 years have passed since the product discontinued
- More than 8 years have passed after delivery
- Required component for servicing already discontinued and no alternative is available.
- Product changed, repaired or remodeled without obtaining a prior permission from the Company.
- Product severely damaged to the extent it has lost its original form

#### Limited warranty

Noise Laboratory Co., Ltd. (hereafter referred to as the Company) warrants its products to be free from defects in materials and workmanship under normal use and service for a period of one year from date of delivery. In the event of failure of a product covered by this warranty, the Company will repair the product or may, at its option, replace it in lieu of repair without charge.

Notwithstanding the foregoing, the Company shall not be responsible for any incidental or consequential damages of any nature, including without limitation thereof loss of would-be profit or compensation demanded from a third party. This warranty is valid only in Japan.

#### 1. Scope

This warranty shall only apply to products made by the Company.

#### 2. Period

One year from date of delivery. The warranty may be valid in 6 months after servicing if the same failure on the same component has repeated.

#### 3. Exclusions

The followings are exclusions from this warranty:

- ◇ Consumable parts (including HV relay)
- ◇ Failure caused by misuse, neglect, accident or abnormal conditions of operation
- ◇ Failure caused by remodeling on the user side without prior permission from the Company
- ◇ Failure caused by servicing by unauthorized personnel by the Company
- ◇ Failure due to fore majeure including but not limited to, acts of God, fire, war, riot, rebellion and others
- ◇ Failure due to shock or drop in or after transit
- ◇ Failure due to operation in environment being out of ambient specifications.
- ◇ A unit shipped to overseas.

## 10. MAINTENANCE

1. When repair, maintenance or internal adjustment is required, it should be performed only by our company's authorized service engineer.
2. Maintenance to be performed by the customer are limited to the outside cleaning and functional check.
3. For products with fuses, unplug before check or fuse replacement.
4. When cleaning products, turn off the power switch and unplug them beforehand.
5. When the body gets dirty, soak a cloth in water or detergent, squeeze the cloth and gently wipe off it.
6. For check and servicing purpose, open designated covers only.

## 11. SERVICE SUPPORT CONTACT

- If you find a phenomenon, which may be judged as a trouble, please inform our maintenance or sales division of the model name of your machine and serial number together with the detail of such phenomenon.
- When you return the product, fill in a repair request form with the detail of the trouble, symptom, model name, serial number and your request. Put the whole equipment in the original package or pack it in a type of package suitable for transit and send to our company.

### For repair and other services, contact:

International Dept.  
Noise Laboratory Co., Ltd.  
1-4-4 Chiyoda, Chuo-ku, Sagami-hara, Kanagawa  
252-0237, Japan  
Tel: +81 (0)42-712-2051 Fax: +81 (0)42-712-2050

## 12. APPLICATION FORM FOR BUYING INSTRUCTION MANUAL

We apply for buying INSTRUCTION MANUAL.

Model: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Applicant's address: \_\_\_\_\_

Company name: \_\_\_\_\_

Section: \_\_\_\_\_

Name of person in charge: \_\_\_\_\_

TEL: \_\_\_\_\_

FAX: \_\_\_\_\_

Cut off this page "APPLICATION FORM FOR BUYING INSTRUCTION MANUAL" from this booklet and keep it for future use with care.

When an INSTRUCTION MANUAL is required, fill out the above Application Form and mail or fax it to NOISE LABORATORY CO., LTD. or our sales agent.