

NoiseCuttrans™

Special Isolation Transformer



Product Catalog

Sales Agent **Daitron**

ABOUT US

We are an electronic equipment manufacturer that was established in Tokyo, Japan in 1960, and since our founding, we have delivered numerous innovative products throughout the world.

We are also a pioneer in noise prevention technology in Japan, and within our company, we have a group that specializes in EMC consulting to tackle the issue of electronic noise.

Since our establishment, we have been engaged in the fabrication of high performance testing equipment.

We have a strong relationship particularly with organizations involved in nuclear physics including the University of Tokyo' s Center for Nuclear Study. In addition, we often receive letters of appreciation from research organizations such as the High Energy Accelerator Research Organization and Osaka University' s Research Center for Nuclear Physics indicating how products from our company have contributed to overcoming considerable development related difficulties.

As we progress toward a full-scale advanced information society, "pollution" brought about by "electrical noise", which is essentially electromagnetic disturbance, is becoming a serious problem.

However, our «Noisecuttrans™» offers a decisive advantage to tackling this problem.

No matter how bad the electromagnetic environment may be, our «Noisecuttranse™» allows customers to exhibit their best equipment performance by preventing "pollution." In fact, we received a letter of appreciation from the Commended by RF Interference Suppression Central Conference in Japan for providing this product around the world.

In addition, we currently sell both catalog products with high growth potential and broad utility and products that are customized to individual needs.

Our products are created by highly-skilled craftsperson focused on achieving high-performance and are used as a trump card in noise countermeasures by customers ranging from small factories to the most advanced scientific research institutions spanning the globe from the north and south poles to the equator.



INTRODUCTION

Noise gives such remarkable interferences as malfunction, destruction, etc. to every electronic device, especially computers and digital type machinery. «Noisecuttrans™» prevents various machinery from this noise. The invasive way of noise is generally two. One is radiation, and noise invades the damaged machinery by flying in the air from the source of its generation. It is called as radiation noise. Another is conduction, and noise invades the damaged machinery by flowing in the leading wire and construct which are good conductors of current, from the source of its generation. It is called as line noise.

«Noisecuttrans™» shuts harmful line noise off by means being inserted in the leading wire way between the source of noise generation and the damaged part of machinery, and has the fundamental waves of needful power and signal passed. In line noise, the noise which flows one line of leading wires as going way and another line as homeward way is called as normal mode, and what flows both lines as going way and earth as homeward way is called common mode. «Noisecuttrans™» shuts both off.

Conventional insulating transformer and shielded transformer cannot shut normal mode off, namely have it passed. However, «Noisecuttrans™» of transformer type can shut normal mode off, and also, can completely shut common mode off by itself. «Noisecuttrans™» differs from what is added LC filter, arrester, varistor, etc. to. «Noisecuttrans™» has the surest effect and highest reliance in today's line noise suppressors.

CHARACTERISTIC

1. WITHOUT EARTH, USABLE IN NO DETERIORATION OF EFFECT

Both primary and secondary sides are covered by individual electromagnetic shielding board respectively. Accordingly, in case of normal mode, the effect is quite unchangeable without earth, and in case of common mode, «Noisecuttrans™» can be used without deteriorating the effect by the shielding board in the secondary side being connected with the ground of the damaged machinery, even in the places where have insufficient earth route and cannot be earthed at all. Namely, any place is available for use of «Noisecuttrans™».

2. UNNECESSITY OF IMPEDANCE MATCHING

The electric circuits of primary and secondary sides are mutually insulated in both direct current and static electricity, and noise is mainly lost in magnetic path. Consequently, the effect is hardly influenced by the impedances of power source and load side. This is very important merit for the equipments and machinery of power source which must meet any load.

3. NO ANXIETY FOR LEAKAGE CURRENT

«Noisecuttrans™» has only leakage current of fundamental wave that is less than usual power transformer. Accordingly, «Noisecuttrans™» is safe for human body, and does not move leakage breaker down. Besides, «Noisecuttrans™» can have high insulation withstand voltage had between wire way and earth.

4. EFFECTIVE FREQUENCY BAND IS WIDE

In case of common mode, any low frequency can be shut off. Moreover, also in normal mode, «Noisecuttrans™» has effective band of several figures from VLF band to VHF. Consequently, any noise can be shut off by «Noisecuttrans™» only. And «Noisecuttrans™» never misses it, even if accidental or unexpected noise invades.

5. CHARACTERISTIC IS SYMMETRICAL AND EFFECT IS FOR BOTH DIRECTIONS

Construction is symmetrical and effect is unchangeable by the direction of passage of noise. Accordingly, one piece of «Noisecuttrans™» can cover all of the case that the machinery is given damage by noise, the case that it is the source of noise generation, and the case that it is given damage by noise and at the same time, generates noise.

6. INFLUENCE OF CURRENT IS SMALL

Effect of «Noisecuttrans™» does not decrease even for noise with marvelous large current. «Noisecuttrans™» is fully effective for lightning surge etc. «Noisecuttrans™» shows the attenuation factor of 1/100000 to 1/1000000 for artificial lightning ($1.2 \times 50 \mu s$ standard impulse voltage).

7. «Noisecuttrans™» PRODUCES NO COUNTER RESULT

«Noisecuttrans™» is being made to have high frequency wave lost very much. In consequence, «Noisecuttrans™» is no afraid of the failure that the series resonance occurs at some frequency and on the contrary, noise is called in, like other components, for example, LC filter circuit. Accordingly, the users are free from the trouble of choice for each case.

8.EFFECT OF CASCADE IS REMARKABLE

Other components do not always increase the effect, even if they are added more than twice, but «Noisecuttrans™» increases the effect at about the multiplier of its number. Therefore, for instance, ideal shield room can be built by installing one piece each of «Noisecuttrans™» at the inside and outside wall of shield room and connecting them in cascade.

9.Any electronic circuit has proper distributed capacity and induction coefficient without fail, and accordingly has many resonance frequency. By it, when the quantity of electricity suddenly changes, many parasitic oscillation occurs. Most noise are this parasitic oscillation. If the source of generation is directly connected with peripheral circuit, the constant mutually interferes and is complicated, and the counterplan becomes difficult only, but this is prevented by its being connected with peripheral circuit through " «Noisecuttrans™» ", that is, «Noisecuttrans™» has the effect that stops the generation.

CARE ON USE

Care on use for «Noisecuttrans™» itself is almost needless. Only select the rated «Noisecuttrans™» not to be over the voltage and current of fundamental wave, and insert into the wire way to connect the source of noise generation and the damaged part of machinery, and «Noisecuttrans™» certainly becomes effective.

Regarding care on installation for " «Noisecuttrans™» ", certainly pay most of it to the method of shield for the prevention of radiation. Noise freely goes convenient way, that is, from conduction to radiation or from radiation to conduction. This is a troublesome reason for the countermeasure of noise. Owing to this, in the concrete, put the leading wire connecting «Noisecuttrans™» and the damaged part in metal pipe closely or use good shield cord, or radiation noise again invades the leading wire which was specially eliminated noise by " «Noisecuttrans™» ". Pay keen attention to this point. The shield of leading wire is indispensable for noise in MHz class that is especially strong in radiation power. And the leading wire connecting the source of generation and «Noisecuttrans™» becomes good antenna and strongly radiates noise in the air, so this case also had better be made good shield. To make this shield completely cannot be attended to too much. Generally, it is ideal to cover closely all conductive parts with the shielding goods which the impedance of high frequency becomes as low as possible. Therefore, our «Noisecuttrans™» itself is put in tight shield case. And the closed terminal box has shield cord made specially and is made to be easy in connecting with outside shielding goods.

PRINCIPLE AND CHARACTERISTIC ON CONSTRUCTION

The principle of noise shut off on «Noisecuttrans™» is as follows:

The space of primary and secondary coils on transformer is insulated. The electrostatic capacity coupling between both coils is shut off by shield. «Noisecuttrans™» is composed that all electric surges are transferred by magnetic coupling. After that, magnetic flux of noise ingredient that is high-frequency is lost in magnetic path, does not link with the secondary coil and magnetic flux of low-frequency ingredient only links with the secondary coil. By means of these, the ingredient only around the fundamental wave of electric surge in the primary side is induced to and regenerated at the secondary side.

On the basis of this principle, our «Noisecuttrans™» is produced with the following three items on construction:

1. The concern of position for the primary and secondary coils insulated fully is selected that the magnetic coupling due to air-core is difficult in occurring.
2. Each coil and the space between them are made electromagnetic shield strictly and in multiplicity, and the electrostatic capacity coupling is shut off and the radiation is prevented.
3. Both coils are penetrated by the magnetic cores with material and shape that the effective permeability rapidly deteriorates in accordance with high-frequency, though the effective permeability is high in fundamental wave.

These three items are a base, and the most useful good are made by the way selected from the numberless combination of material and shape. Namely, «Noisecuttrans™» is quite different in construction from the insulating transformer, shielded transformer, etc. for the elimination of common mode noise in low band.

CLASSIFICATION



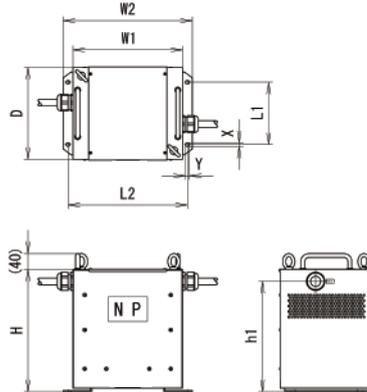
STANDARD SPECIFICATIONS

Rated output	1kVA, 2kVA, 3kVA, 5kVA
Frequency	50Hz/60Hz
Primary Secondary voltage	Select voltage Up to two taps are available 100V,105V,110V,115V,120V,200V,208V,220V,230V,240V
Phase	Single phase
Class of insulation system	Class H
Insulation resistance	Over 100MΩ (DC1000V Measurement by insulation tester)
Lightning implulse	1.2×50 μs standard lightning impulse 5kV
Standards	NCT-R3-C2 : EN61558-2-4 : 2009 EN50581 : 2012 NCT-R3-U2 : UL1446(E305683) UL5085-1,5085-2(E252629)



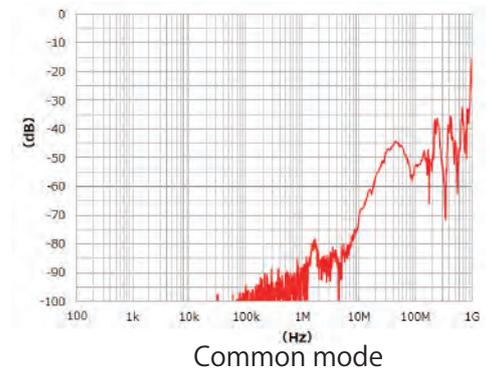
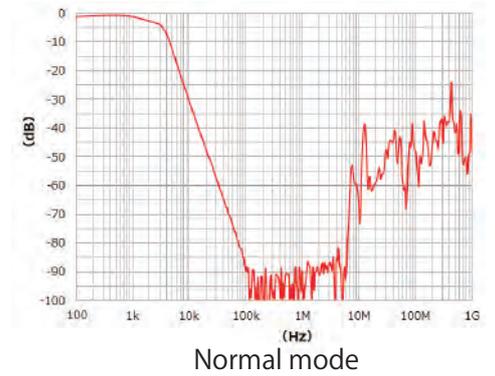
NCT-R3-C2

Dimension / Weight

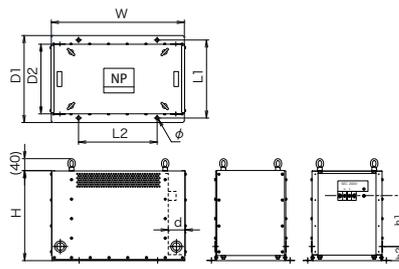


	1kVA	2kVA	3kVA	5kVA
W1	189	220	280	280
W2	230	260	380	380
D	166	203	236	236
H	253	287	315	382
L1	110	140	160	160
L2	210	240	305	305
h1	231	265	284	351
X	7	7	9	9
Y	9	9	11	11
[kg]	18	30	48	65

Attenuation factor(Sample)

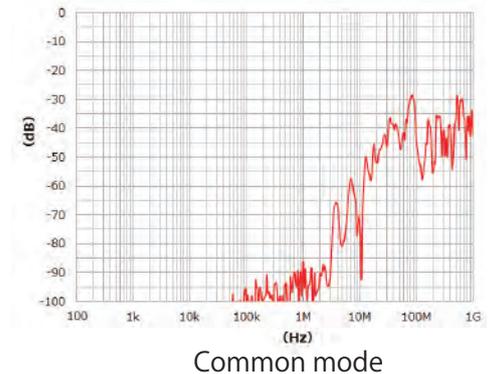
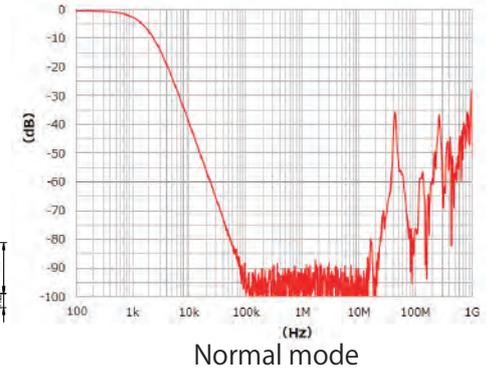


Dimension / Weight



	1kVA	2kVA	3kVA	5kVA
W	288	288	440	440
D1	190	190	290	290
D2	150	150	232	232
H	190	256	240	300
L1	170	170	260	260
L2	170	170	260	260
d	36	36	56	56
h1	101	162	113	169
h2	37	37	47	47
φ	8	8	12	12
[kg]	13	22	36	55

Attenuation factor(Sample)



NCT-R3-U2

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Manufacture

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- To ensure correct use of this product, read the "Instruction Manual" prior to use.
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