

귀중

등록번호 :

# 승 인 원

## (APPROVAL SHEET)

품 목	NOISE FILTER
품 명	TNS-S (80~700A)
Rev. No.	A



승 인 (APPROVED)	검 토 Inspected by :
	심 사 Checked by :
	승 인 Approved by :
	날 짜 Date :

상기와 같이 승인원을 제출하오니 검토하시어 승인하여 주시기 바랍니다.

2020 년 03 월 31 일

작 성 : 선 임 이 준 욱

검 토 : 수 석 유 영 문

승 인 : 상 무 박 경 수

**ORIENT**  
ELECTRONICS

경기도 성남시 중원구 상대원동 143-1

TEL : (031) 7370-200

FAX : (031) 7370-279

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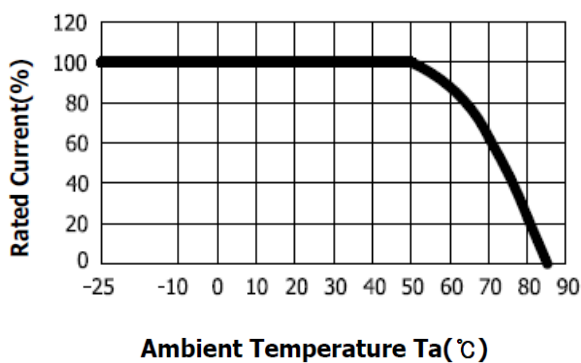
# SPECIFICATIONS

<b>Product.</b>	Noise Filter	<b>Date.</b>	2020. 03. 31
<b>Model.</b>	TNS-20080~20100	<b>Rev.</b>	A
<b>Customer.</b>	STANDARD	<b>Page.</b>	1 / 6

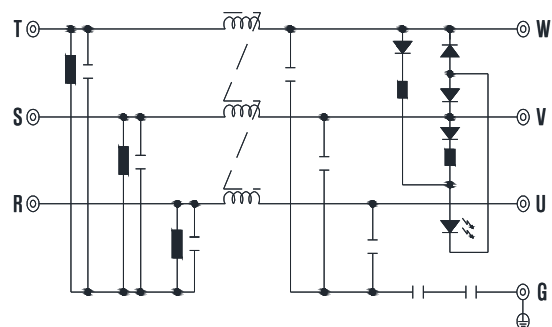
MODEL		Unit.	TNS-20080	TNS-20100
INPUT	Voltage	[V]	3Φ, 250VAC or DC	
	Frequency	[Hz]	50 / 60 or DC	
	Rated Current *1)	[A]	80	100
Line Voltage Drop		[V]	0.3V Max	
Hi-Pot Test voltage		[V]	2,500VAC (at cut off current 100mA / 1Min)	
Isolation Resistance		[MΩ]	100MΩ Min (500VDC / 1Min)	
Leakage Current (60Hz)	250VAC	[mA]	2.5mA Max	
Temperature Rise		[℃]	50℃ Max	
Environment	Operating temp. & Humidity	-	-25 ~ +85℃, 20 ~ 95% RH	
	Storage temp. & Humidity	-	-40 ~ +85℃, 20 ~ 95% RH	
	Vibration	-	10~55Hz at 1G 5minutes period, 30minutes each X, Y, Z	
Dimension	Size(WxHxD)	[mm]	235 * 115 * 85	
Weight(Typ)		[g]	2250g	2450g
Safety Standards		-	IEC/EN60939-1, IEC/EN60939-2, KC60939-1, KC60939-2	

비 고 :

- Derating Curve



- Circuit Diagram



= NOTES =

- \*1. Value for Ta less than 50℃  
For Ta more than 50℃, According to the derating curve as above

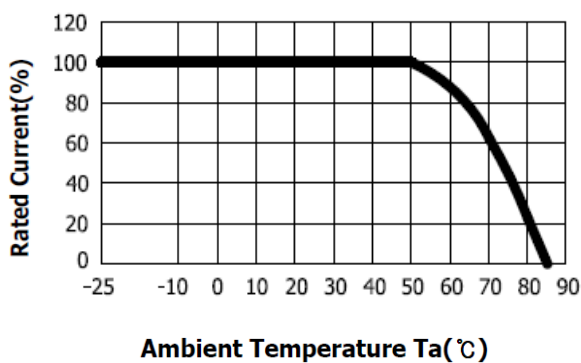
# SPECIFICATIONS

<b>Product.</b>	Noise Filter	<b>Date.</b>	2020. 03. 31
<b>Model.</b>	TNS-50080~50100	<b>Rev.</b>	A
<b>Customer.</b>	STANDARD	<b>Page.</b>	2 / 6

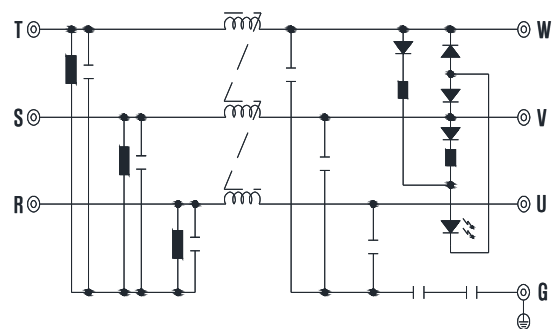
MODEL		Unit.	TNS-50080	TNS-50100
INPUT	Voltage	[V]	3Φ, 500VAC or DC	
	Frequency	[Hz]	50 / 60 or DC	
	Rated Current *1)	[A]	80	100
Line Voltage Drop		[V]	0.3V Max	
Hi-Pot Test voltage		[V]	2,500VAC (at cut off current 100mA / 1Min)	
Isolation Resistance		[MΩ]	100MΩ Min (500VDC / 1Min)	
Leakage Current (60Hz)	500VAC	[mA]	5.0mA Max	
Temperature Rise		[℃]	50℃ Max	
Environment	Operating temp. & Humidity	-	-25 ~ +85℃, 20 ~ 95% RH	
	Storage temp. & Humidity	-	-40 ~ +85℃, 20 ~ 95% RH	
	Vibration	-	10~55Hz at 1G 5minutes period, 30minutes each X, Y, Z	
Dimension	Size(WxHxD)	[mm]	235 * 115 * 85	
Weight(Typ)		[g]	2250g	2450g
Safety Standards		-	IEC/EN60939-1, IEC/EN60939-2, KC60939-1, KC60939-2	

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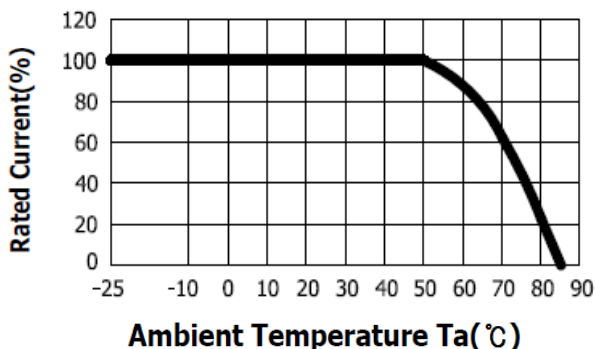
# SPECIFICATIONS

Product.	Noise Filter	Date.	2020. 03. 31
Model.	TNS-20120~20250	Rev.	A
Customer.	STANDARD	Page.	3 / 6

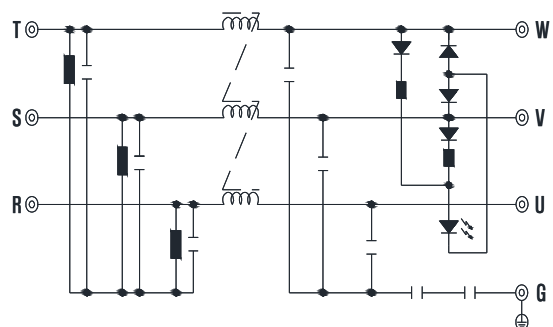
MODEL		Unit.	TNS-20120	TNS-20150	TNS-20200	TNS-20250
INPUT	Voltage	[V]	3Φ, 250VAC or DC			
	Frequency	[Hz]	50 / 60 or DC			
	Rated Current *1)	[A]	120	150	200	250
Line Voltage Drop		[V]	0.3V Max			
Hi-Pot Test voltage		[V]	2,500VAC (at cut off current 100mA / 1Min)			
Isolation Resistance		[MΩ]	100MΩ Min (500VDC / 1Min)			
Leakage Current (60Hz)	250VAC	[mA]	2.5mA Max			
Temperature Rise		[℃]	50℃ Max			
Environment	Operating temp. & Humidity	-	-25 ~ +85℃, 20 ~ 95% RH			
	Storage temp. & Humidity	-	-40 ~ +85℃, 20 ~ 95% RH			
	Vibration	-	10~55Hz at 1G 5minutes period, 30minutes each X, Y, Z			
Dimension	Size(WxHxD)	[mm]	336 * 157 * 110			
Weight(Typ)		[g]	3100g	3100g	3850g	4200g
Safety Standards		-	IEC/EN60939-1, IEC/EN60939-2, KC60939-1, KC60939-2			

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- Derating Curve



- Circuit Diagram



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For Ta more than 50℃, According to the derating curve as above

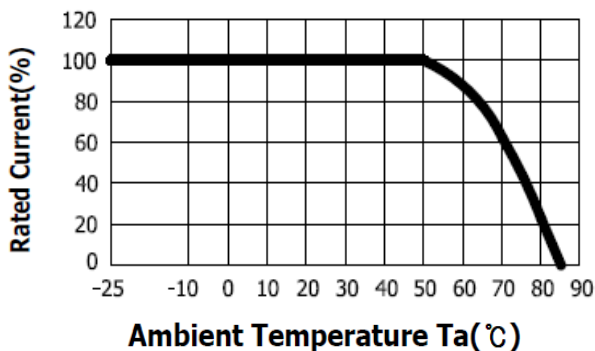
# SPECIFICATIONS

Product.	Noise Filter	Date.	2020. 03. 31
Model.	TNS-50120~50250	Rev.	A
Customer.	STANDARD	Page.	4 / 6

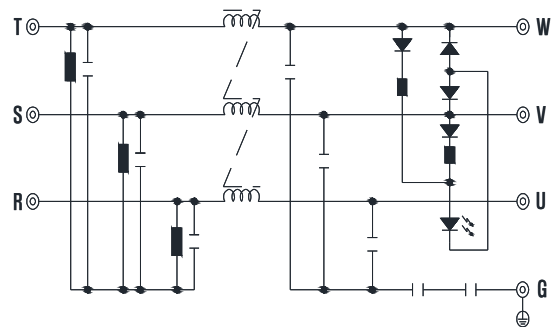
MODEL		Unit.	TNS-50120	TNS-50150	TNS-50200	TNS-50250
INPUT	Voltage	[V]	3Φ, 500VAC or DC			
	Frequency	[Hz]	50 / 60 or DC			
	Rated Current *1)	[A]	120	150	200	250
Line Voltage Drop		[V]	0.3V Max			
Hi-Pot Test voltage		[V]	2,500VAC (at cut off current 100mA / 1Min)			
Isolation Resistance		[MΩ]	100MΩ Min (500VDC / 1Min)			
Leakage Current (60Hz)	500VAC	[mA]	5.0mA Max			
Temperature Rise		[℃]	50℃ Max			
Environment	Operating temp. & Humidity	-	-25 ~ +85℃, 20 ~ 95% RH			
	Storage temp. & Humidity	-	-40 ~ +85℃, 20 ~ 95% RH			
	Vibration	-	10~55Hz at 1G 5minutes period, 30minutes each X, Y, Z			
Dimension	Size(WxHxD)	[mm]	336 * 157 * 110			
Weight(Typ)		[g]	3100g	3100g	3850g	4200g
Safety Standards		-	IEC/EN60939-1, IEC/EN60939-2, KC60939-1, KC60939-2			

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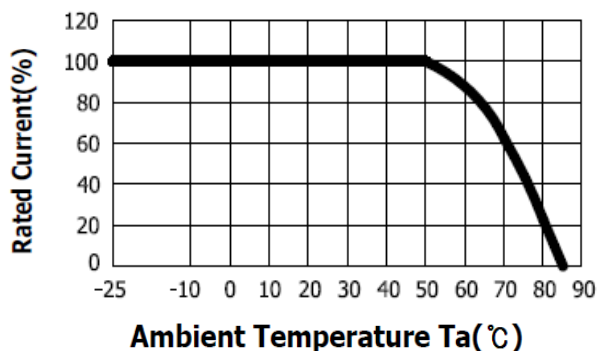
# SPECIFICATIONS

Product.	Noise Filter	Date.	2020. 03. 31
Model.	TNS-20300 ~ 20700	Rev.	A
Customer.	STANDARD	Page.	5 / 6

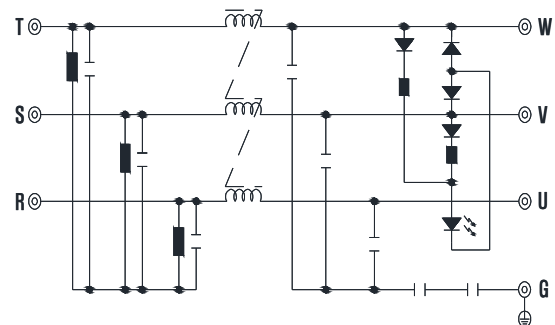
MODEL		Unit.	TNS-20300	TNS-20400	TNS-20500	TNS-20600	TNS-20700
INPUT	Voltage	[V]	3Φ, 250VAC or DC				
	Frequency	[Hz]	50 / 60 or DC				
	Rated Current *1)	[A]	300	400	500	600	700
Line Voltage Drop		[V]	0.3V Max				
Hi-Pot Test voltage		[V]	2,500VAC (at cut off current 100mA / 1Min)				
Isolation Resistance		[MΩ]	100MΩ Min (500VDC / 1Min)				
Leakage Current (60Hz)	250VAC	[mA]	2.5mA Max				
Temperature Rise		[℃]	50℃ Max				
Environment	Operating temp. & Humidity	-	-25 ~ +85℃, 20 ~ 95% RH				
	Storage temp. & Humidity	-	-40 ~ +85℃, 20 ~ 95% RH				
	Vibration	-	10~55Hz at 1G 5minutes period, 30minutes each X, Y, Z				
Dimension	Size(WxHxD)	[mm]	340 * 160 * 150				
Weight(Typ)		[g]	4850g	4850g	8250g	8250g	8360g
Safety Standards		-	IEC/EN60939-1, IEC/EN60939-2, KC60939-1, KC60939-2				

비 고 :

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- Circuit Diagram



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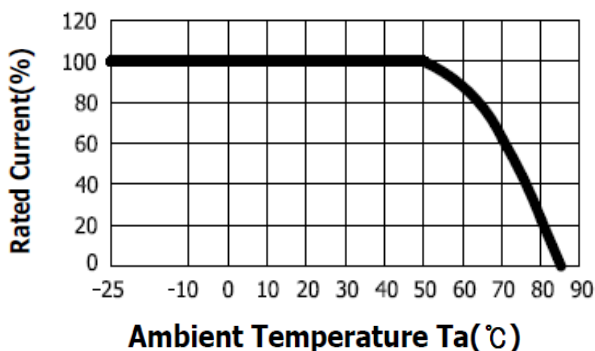
# SPECIFICATIONS

Product.	Noise Filter	Date.	2020. 03. 31
Model.	TNS-50300 ~ 50700	Rev.	A
Customer.	STANDARD	Page.	6 / 6

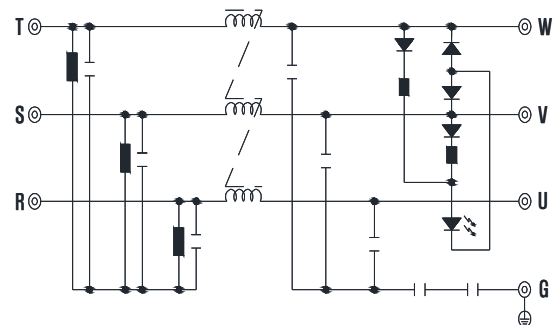
MODEL		Unit.	TNS-50300	TNS-50400	TNS-50500	TNS-50600	TNS-50700
INPUT	Voltage	[V]	3Φ, 500VAC or DC				
	Frequency	[Hz]	50 / 60 or DC				
	Rated Current *1)	[A]	300	400	500	600	700
Line Voltage Drop		[V]	0.3V Max				
Hi-Pot Test voltage		[V]	2,500VAC (at cut off current 100mA / 1Min)				
Isolation Resistance		[MΩ]	100MΩ Min (500VDC / 1Min)				
Leakage Current (60Hz)	500VAC	[mA]	5.0mA Max				
Temperature Rise		[℃]	50℃ Max				
Environment	Operating temp. & Humidity	-	-25 ~ +85℃, 20 ~ 95% RH				
	Storage temp. & Humidity	-	-40 ~ +85℃, 20 ~ 95% RH				
	Vibration	-	10~55Hz at 1G 5minutes period, 30minutes each X, Y, Z				
Dimension	Size(WxHxD)	[mm]	340 * 160 * 150				
Weight(Typ)		[g]	4850g	4850g	8250g	8250g	8360g
Safety Standards		-	IEC/EN60939-1, IEC/EN60939-2, KC60939-1, KC60939-2				

비 고 :

- Derating Curve



- Circuit Diagram



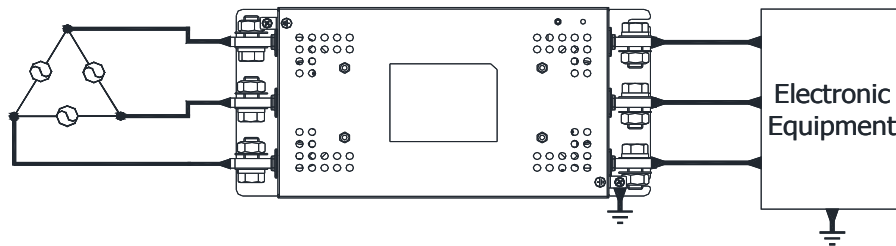
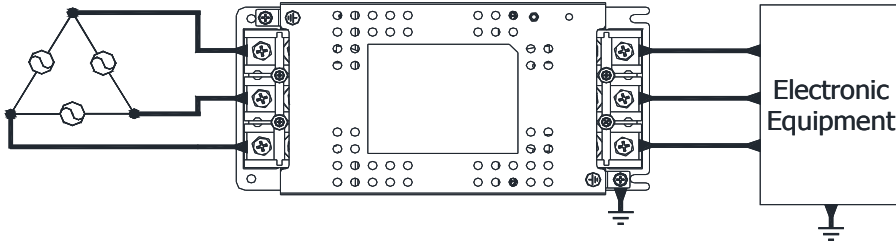
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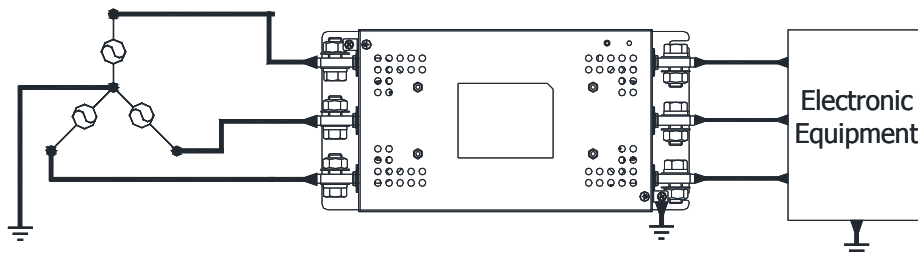
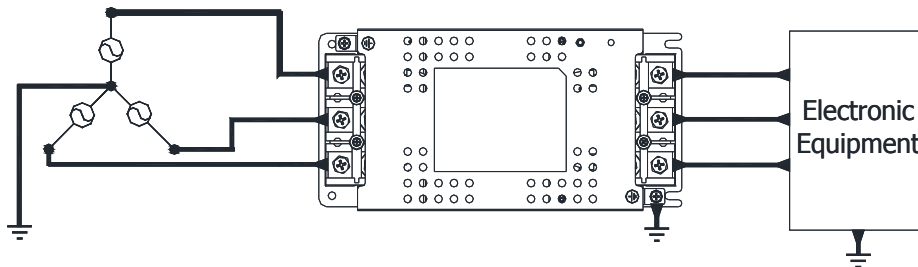
# User Guide

## 1. INSTALLATION CONDITION

### 1-1. NOISE FILTER 결선



< Δ-결선 >



< Y-결선 >

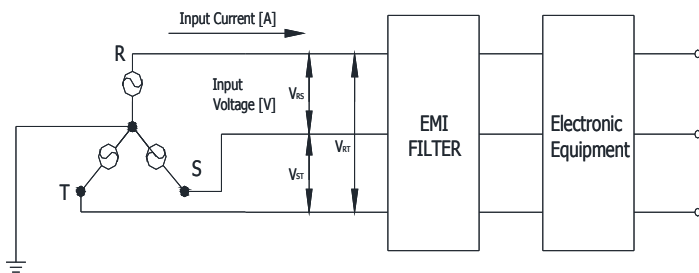
1-2. INPUT, OUTPUT Terminal Connection

Pin Connection		Function
AC INPUT	AC R상	Noise Filter AC 입력 Terminal
	AC S상	
	AC T상	
AC OUTPUT	AC R상	Noise Filter AC 출력 Terminal
	AC S상	
	AC T상	
Frame ground		CASE 접지

2. ELECTRICAL CHARACTERISTICS

2-1. Rated Voltage : 3상, 250VAC or 500VAC

2-2. Rated Current



$$\text{Input Current [A]} = \frac{\text{Input Capacity of the Equipment [VA]}}{\text{Input Voltage [V]} \times \sqrt{3}}$$

$$\text{Rated Current [A]} \geq \text{Input Current [A]}$$

2-3. Withstand Voltage Test

AC 입,출력과 접지간 절연내압이 AC 2.5KV에서 1분간, Cut off Current 100mA 이하이다.

2-4. Isolation Resistance Test

AC 입,출력과 접지간 절연저항이 DC 500V에서 1분간, 100MΩ이상이다.

2-5. Leakage Current Test

Input Voltage	Leakage Current	Note
0 ~ 250VAC	2.5mA Max	입력 전압 인가시 LINE-GND간 최대 누설전류량
251 ~ 500VAC	5.0mA Max	

### 3. ENVIRONMENT CONDITION

#### 3-1. Operating Temperature Test

아래의 온, 습도에서 정격입출력 상태로 8시간 운영 시험에서 제반 전기적 특성 및 기구적 특성을 만족하여야 한다.

- (1) 온도 :  $-25^{\circ}\text{C} \sim +85^{\circ}\text{C}$
- (2) 상대습도 : 20 ~ 90% RH

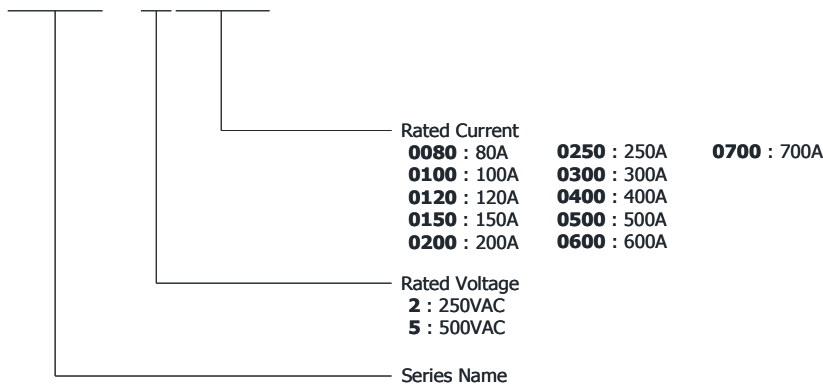
#### 3-2. Vibration Test

아래의 진동 조건에 따라 1시간 진동 시험 후 제반 전기적 특성 및 기구적 특성을 만족하여야 한다.

- (1) Vibration Frequency : 10~55Hz, 1G
- (2) Vibration Period : 5minutes

### 4. ORDERING INFORMATION

## TNS - 50080



### 5. 사용시 주의 사항

- 5-1. 제품에 명시된 허용 전압, 허용 전류, 사용온도조건에 맞게 사용한다.
- 5-2. Noise Filter와 연결하는 단자 및 케이블은 제품 허용 전압/전류 이상의 것을 사용한다.
- 5-3. 접지시 케이블을 가능한한 굵고 짧게 사용한다.
- 5-4. 제품의 입출력 단자 체결시 무리한 힘을 가하여 파손되지 않도록 주의한다.
- 5-5. 제품 설치 및 사용시 상간 단락이 되지 않도록 주의한다.
- 5-6. 통전 중에는 단자부위에 손이나 기타 신체부위가 접촉되지 않도록 주의한다.

## 6. 품질 보증

- 6-1. 계약자는 계약상 별도로 규정하지 않은 본 규격서에 명시된 모든 성능과 특성을 자체 또는 공인 시험 기관의 검사 시설을 이용하여 시험검사를 할 수 있다.
- 6-2. 본 규격서 상에서 규정한 필요조건에 대한 확인 검사 이외에 제품의 품질을 확인하기 위하여 필요한 검사를 할 수 있다.

## 7. 주 기

- 7-1. 본 규격서 상에 명시되지 않은 사항은 본 품의 신뢰도와 호환성 및 성능에 지장이 없는 범위 내에서만 이를 허용한다.

# Attenuation Characteristics

## 1. METHOD OF MEASURING ATTENUATION

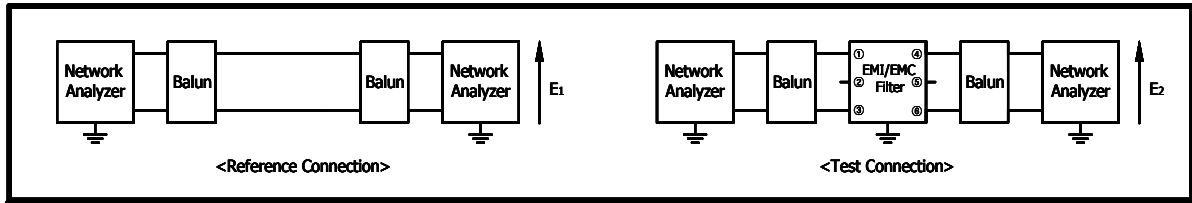


Fig.3.1 Differential Mode Attenuation Measurement Diagram

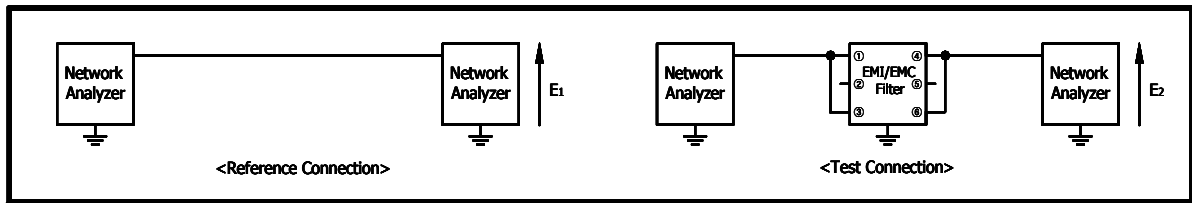
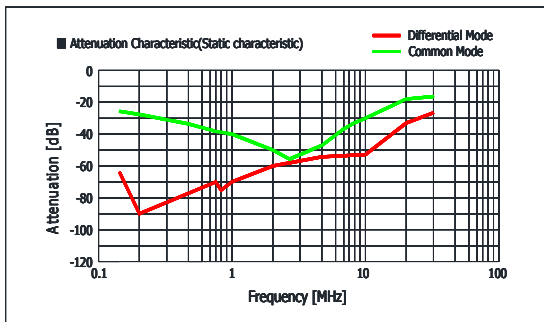


Fig.3.2 Common Mode Attenuation Measurement Diagram

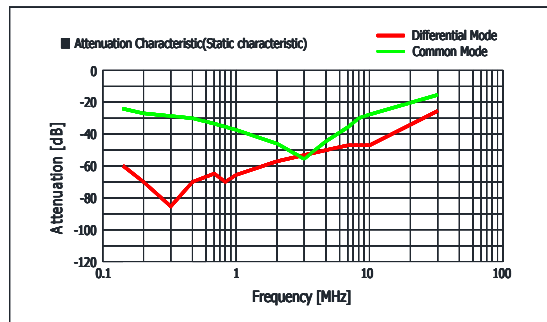
## 2. ATTENUATION CHARACTERISTICS

2-1. TNS-Series (Rated Current : 80~150A)

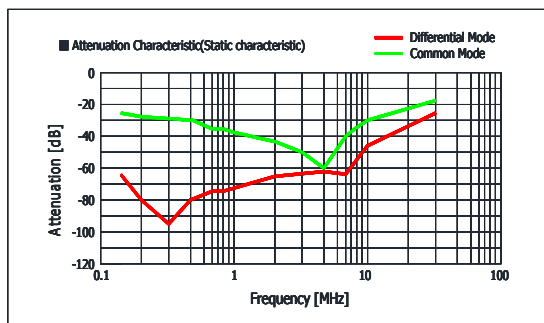
TNS-20080/50080



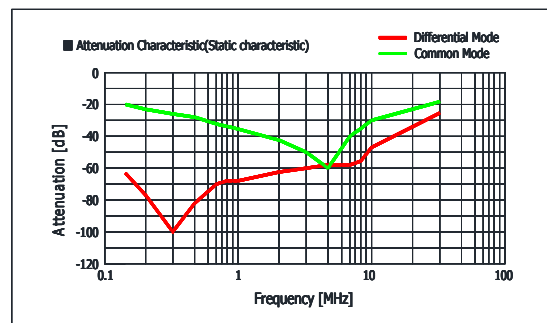
TNS-20100/50100



TNS-20120/50120

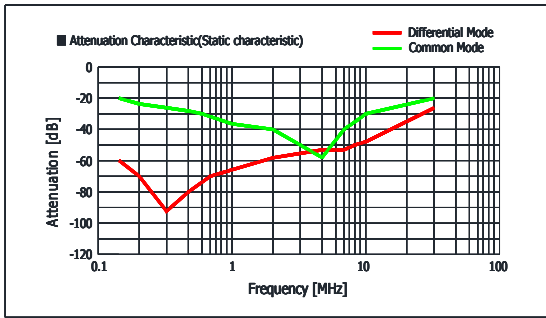


TNS-20150/50150

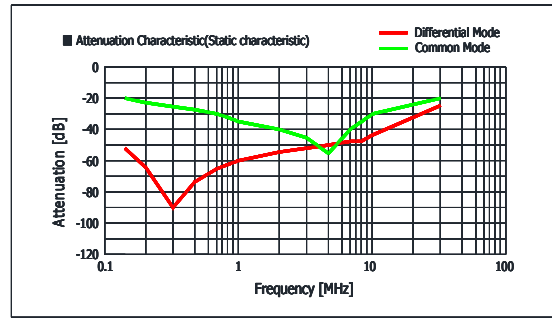


2-2. TNS-Series (Rated Current : 200~700A)

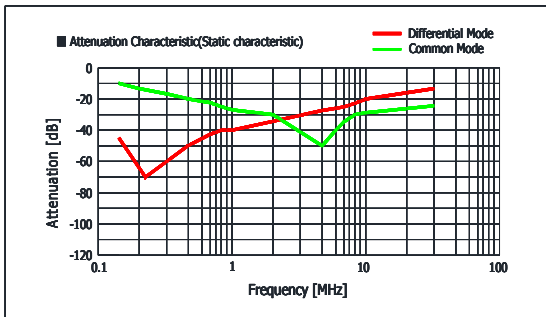
TNS-20200/50200



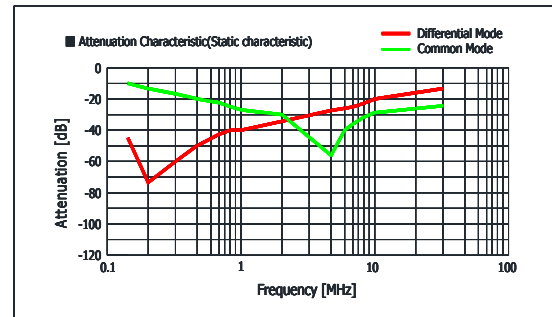
TNS-20250/50250



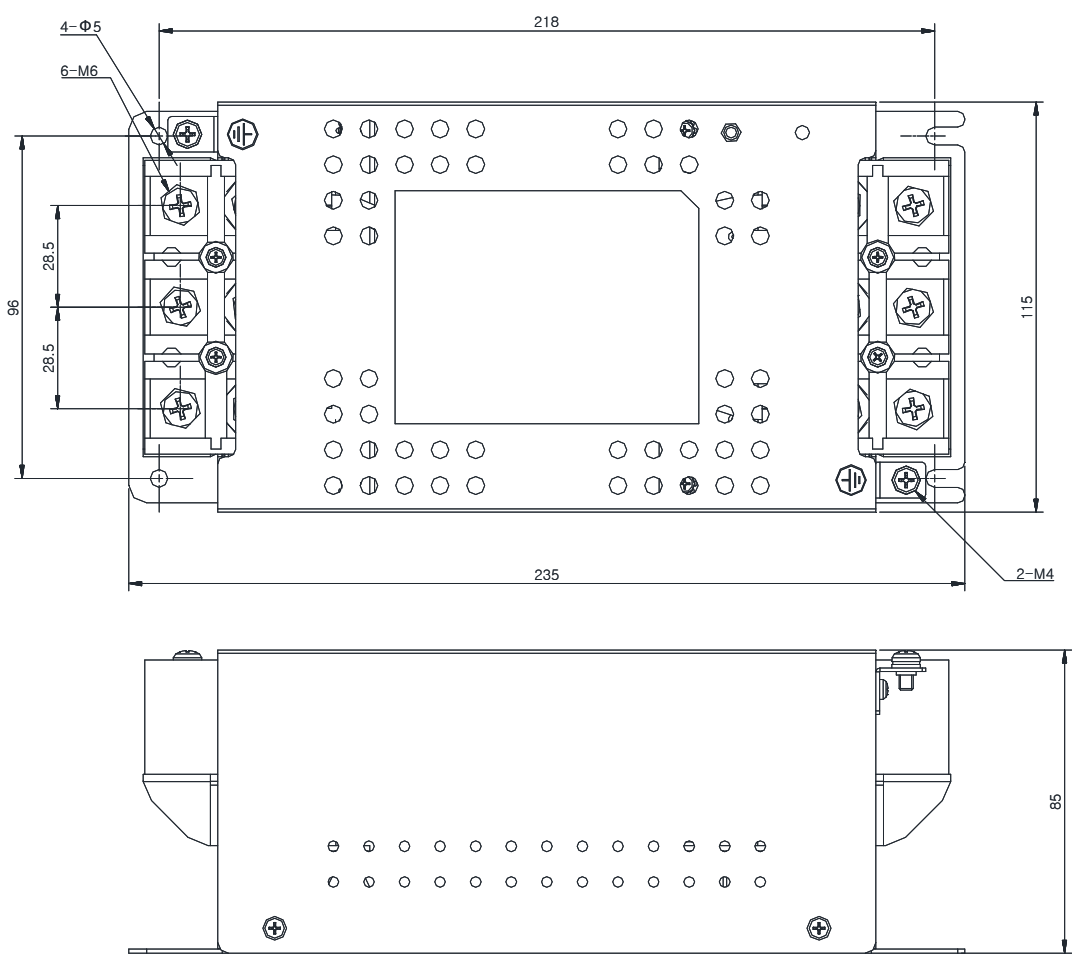
TNS-20300/50300, TNS-20400/50400



TNS-20500/50500, TNS-20600/50600, TNS-20700/50700



**Dimension** **TNS-20080/50080~TNS-20100/50080**

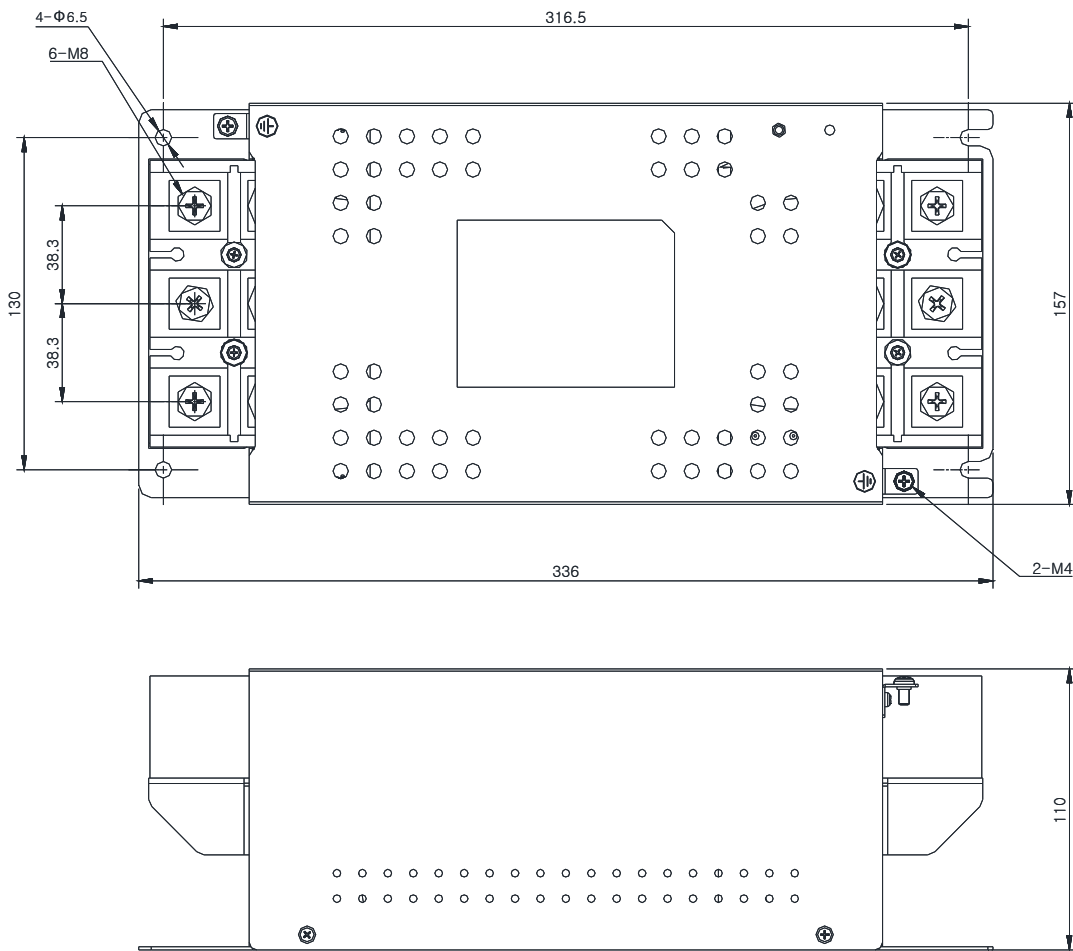


\* Tolerance : ±1  
 \* Dimension in mm



# Dimension

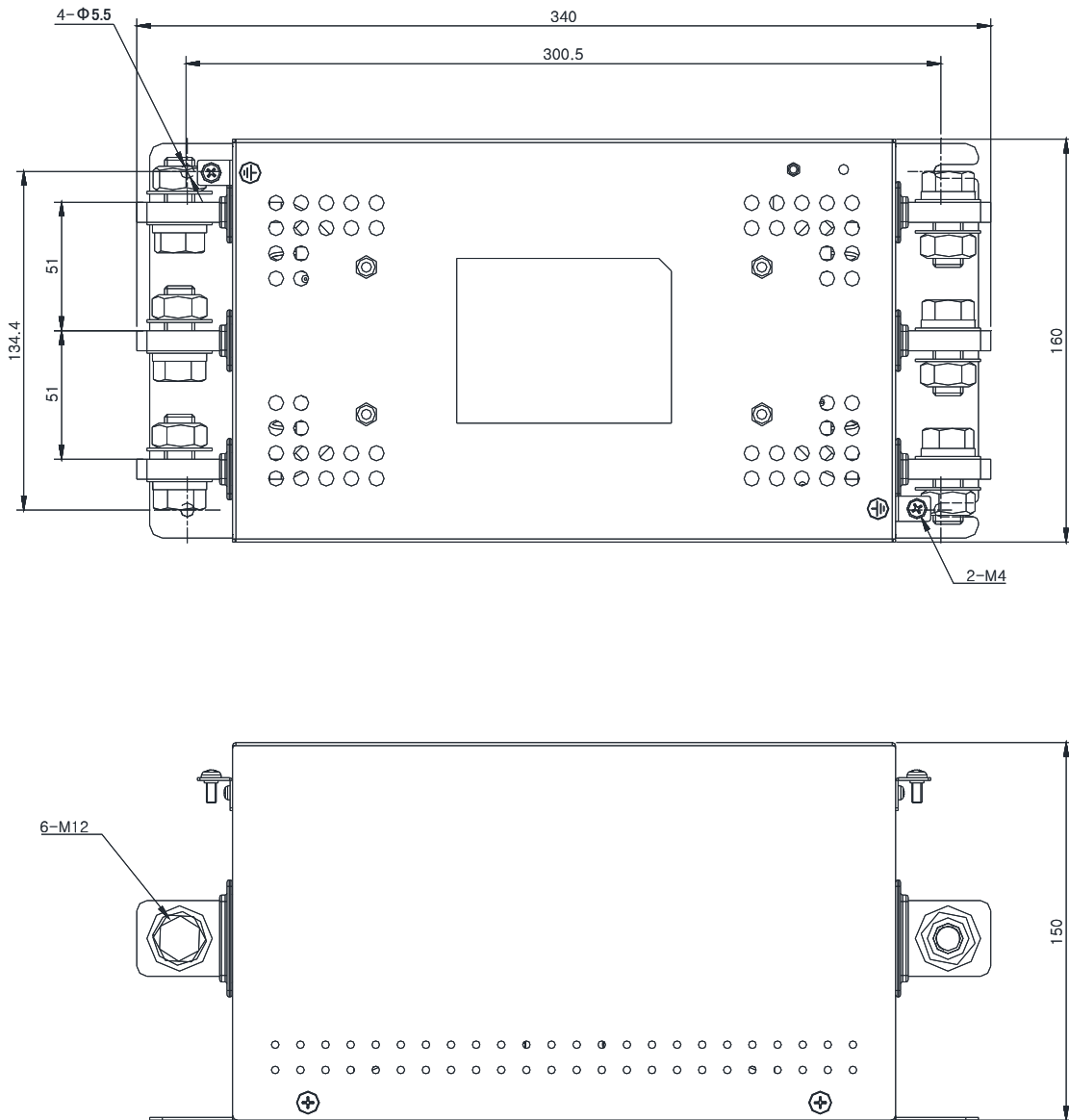
# TNS-20120/50120~TNS-20250/50250



\* Tolerance : ±1  
\* Dimension in mm

# Dimension

# TNS-20300/50300~TNS-20700/50700



\* Tolerance :  $\pm 1$   
 \* Dimension in mm