



TN Type

ATS(60~630A)

Information to Order_ 주문정보

OSS - 6 - TN - - P - - c
A B C D E

A Rated Current 정격전류

06	1	2	4	6
60A	100A	200A	400A	630A

- B** Connection (접속방식)
- F : Front (표면)
 - B : Back (배면)
 - D : Draw-out (인출형)

- C** Number of Poles(극수)
- 2 : 2 P
 - 3 : 3 P
 - 4 : 4 P

- D** Operating Voltage(조작전압)
- A1 : AC 110V
 - A2 : AC 220V
 - D1 : DC 110V
 - D2 : DC 125V

- E** Aux switch(보조접점)
- 1 : 1 c (기본)
 - 2 : 2 c (옵션)

Features_ 특징

Neutral position stop method (3-Position ATS)
 In case with the uninterrupted power system, it is recommended to stop at the OFF position set by tripping mechanism for the stable power. Instantaneous transfer without stop can be also performed by operating signal.
 A ⇒ Off ⇒ B, B ⇒ Off ⇒ A, and A ⇒ Off ⇒ A, B ⇒ Off ⇒ B

One-Coil Application
 One-coil is employed for the transfer to normal power source and emergency power source.

Compact & Lightweight Design
 Compact & Lightweight Design makes the minimized mounting space and convenient installation.

Excellent Breaking Capacity
 Designed for sufficiently large chamber to extinguish the arc when transferred. Arc-extinguishing area is designed for convenient inspection and maintenance.

Protection against the remaining power source
 Time delay to transfer is available so that the remaining power can not be induced to the main power to protect the load.

Last Break, 1st make Neutral contact
 Last Break, 1st make Neutral contact to reduce nuisance tripping in the ground fault protection system. IEC 60947-1 (Clause 7.1.9)

Construction for Safety
 For safe operation, molded construction is employed on breaking parts. And also, latching indicator is prepared to indicate the operating condition.

중간정지 방식 (3-Position ATS)
 무정전 전원장치가 있는 경우 정전 또는 복전 시 긴급 절체되는 것 보다는 회로의 안정 및 안전을 확인한 후 절체할 수 있는 방식으로 트립장치에 의해 중간위치(Off)가 가능합니다.
 A ⇒ Off ⇒ B, B ⇒ Off ⇒ A, and A ⇒ Off ⇒ A, B ⇒ Off ⇒ B

단일코일 방식
 한 개의 코일로 절체하는 방식입니다.

소형 경량
 작고 가벼워 공간 활용 및 작업자 능률이 높아집니다.

강력한 차단 능력
 독특한 구조의 소화실 설계로 아크차단이 짧고 접점의 소모가 작아 장기간 사용 가능하며 전면에서 소화실을 열 수 있어 내부 접점의 점검이 편리합니다.

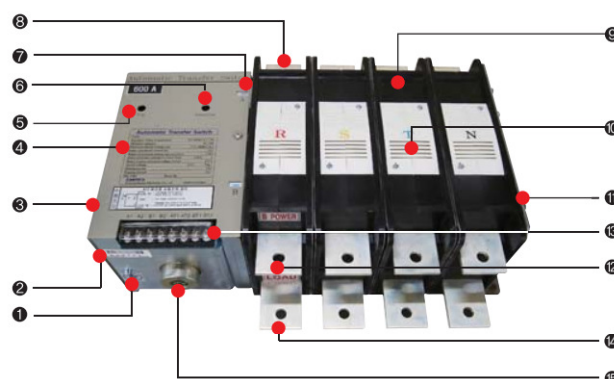
부하측 잔류전원 혼촉방지
 Neutral(OFF)부의 TN형은 외부 시퀀스에 의해 절체시간을 임의 설정하여 전원과 부하측 잔류 전압과의 혼촉을 확실하게 방지할 수 있습니다.

중성선 선 투입 후 개방
 투입 시 중성선이 삼상(L1, L2, L3)보다 먼저 투입되고 개방 시 나중에 끊어지는 구조로 순간적으로 중성선이 개방되어 발생될 수 있는 사고를 방지. IEC 60947-1 (Clause 7.1.9)

안전 구조 설계
 차단부가 분진방지형 몰드구조로 설계되었고, 동작 위치 표시기가 있어 수명이 길고 사용자가 안전합니다.

External View_ 외관명칭

- ① Earthing Terminal (접지단자)
- ② Manual Operating Shaft (Anti-Clockwise) (수동조작 바)
- ③ Circuit Diagram (회로도)
- ④ Name Plate (명판)
- ⑤ Trip Button (트립 버튼)
- ⑥ Selective Button for "B" Power-Closing (선택 버튼)
- ⑦ On/Off Indicator (동작표시기)
- ⑧ Circuit Terminal for "A" Power (A전원측 주회로 단자)
- ⑨ Contacts (접점부)
- ⑩ Arc-Extinguishing Chamber (소화실)
- ⑪ Aux Switch (보조스위치)
- ⑫ Circuit Terminal for "B" Power (B전원측 주회로 단자)
- ⑬ Control Circuit Terminal Block (조작전원 단자대)
- ⑭ Main Circuit Terminal for Load (부하측 주회로 단자)
- ⑮ Amateur for Closing Coil (투입 코일)





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◆ Application and Selection_ 적용과 선정

Applicable Standards
- IEC 60947-6-1 - UL 1008

Control Order
It is recommended to give more than 0.5sec for operation, though transfer time is completed

Interlock
Interlocking is required for control circuit so that control order should not supply to both A power source side and B power source side simultaneously.

Control Circuit
ATS is designed so that operation current should be off by internal switch after completion of operation. If operation current is off with auxiliary switch of the unit, it may cause a malfunction.

See page 65 for calculation of TR capacity for operation.

■ **관련 규격**
- IEC 60947-6-1 - UL 1008

■ **제어 지령**
투입 및 트립 절체동작은 0.3초 이내에 완료되지만 0.5초 이상의 제어지령으로 동작될 수 있도록 Sequence를 설정하여 주십시오.

■ **인터록**
조작회로에는 A 전원 측과 B 전원 측에 동시지령이 되지 않도록 인터록(전기적)을 설치하여 주십시오. TN형의 경우 동일 방향으로 투입, 트립 지령이 되지 않도록 Sequence를 설정하여 주십시오.

■ **제어회로**
ATS는 동작완료 후 내부 SW에 의해 조작전류를 OFF 하도록 설계되어 있습니다. 본체의 보조 SW로 조작전류를 OFF하면 오동작의 원인이 됩니다.

■ **조작용 TR 용량 선정은 65 페이지 참조**

◆ Specification_ 정격사양

TYPE		606-TN 61-TN			62-TN			64-TN 66-TN			
Rated Operational Voltage (정격사용전압)	Ue	AC 600V									
Rated Insulation Voltage (정격절연전압)	Ui	AC 600V									
Rated Current (정격전류)	Ie	60 A, 100 A			200 A			400 A, 630 A			
Neutral Phase Current (중성극전류)		60 A, 100 A			200 A			400 A, 630 A			
Kind of Throw (투수)		Double Throw (쌍투)									
Connection (접속방식)		Front (표면 : F), Back (배면 : B), Draw-out (인출형 : D)									
Number of Poles (극수)		2P	3P	4P	2P	3P	4P	2P	3P	4P	
Weight [kg] (중량)	Fixed (고정)	6	7	8	7	8	10	12	15	18	
	Draw-out (인출)		40	49		40	49		40	49	
Rated Short-Time Withstand Current (정격 단시간 내전류)	Icw	5 kA			10 kA			12 kA			
Rated Short-Circuit Making Capacity (단락 투입 전류)	Icm peak	7.5 kA			17 kA			24 kA			
Switching Capacity (개폐용량)		AC-33B									
Switching Frequency (개폐빈도)		60 Time / Hour									
Operating Current (조작전류) peak	DC 110V ~ 125V	7 A			7 A			8 A			
	AC 100V ~ 110V	7 A			7 A			8 A			
	AC 200V ~ 240V	6 A			6 A			6 A			
	Trip Coil Current	DC 110V = 4.5A, AC110V = 4.5A, AC 220V = 3A									
Operating Time (동작시간)	"A"Power	Making	≤ 55 ms			≤ 55 ms			≤ 60 ms		
		Breaking	≤ 20 ms			≤ 20 ms			≤ 25 ms		
	"B"Power	Making	≤ 80 ms			≤ 80 ms			≤ 90 ms		
		Breaking	≤ 20 ms			≤ 20 ms			≤ 25 ms		
Number of Operating Cycles (정격 개폐 회수)	Without Current (무통전)	10,000									
	With Current (통전)	5,000									
Cautions (주의사항)		1. For complete operation, Be sure to provide control source for more than 0.5sec. 2. When control source will be provided to A side and B side simultaneously, Coil may be damaged. 3. Control Relay should be selected considering sufficient contact capacity to withstand against more than control current. 1. 조작지령은 0.5sec 이상으로 하여 확실한 동작을 할 수 있도록 하여 주십시오. 2. A측, B측 동시 조작지령 시 코일 소손의 원인이 됩니다. 3. 조작 Relay는 조작전류 이상의 충분한 점접용량을 선정하여 주십시오.									



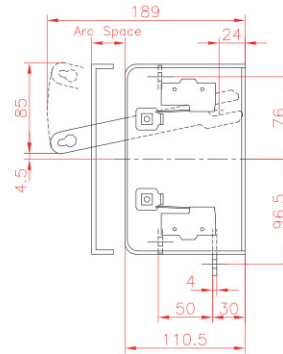
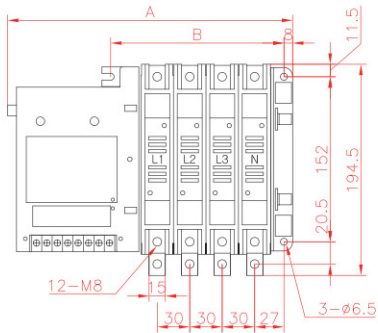
TN-F Type

ATS(60~630A)

◆ Outline Dimension_ 외형도

Unit : mm

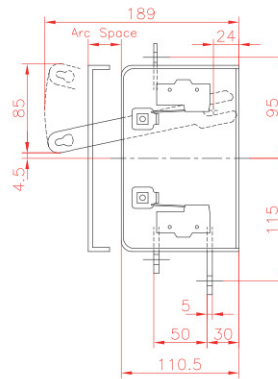
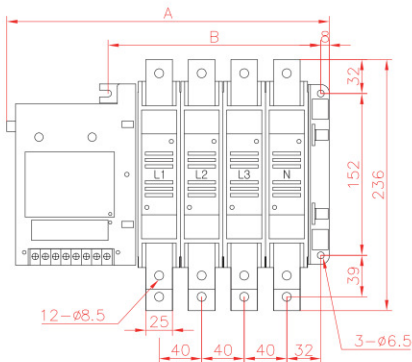
60A, 100A



OSS-606~61-TN-F

Pole	Dimension (mm)	
	A	B
2 P	204	100
3 P	234	130
4 P	264	160

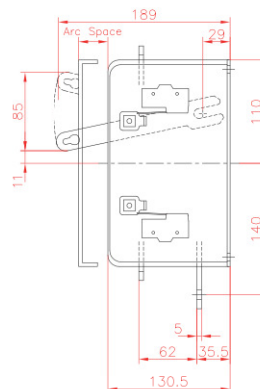
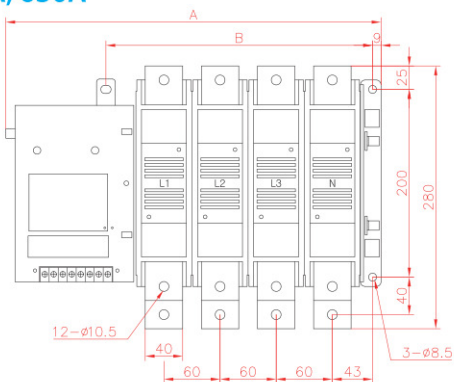
200A



OSS-62-TN-F

Pole	Dimension (mm)	
	A	B
2P	224	120
3P	264	160
4P	304	200

400A, 630A



OSS-64~66-TN-F

Arc space for main circuit
 - 30mm for AC 220V
 - 60mm for AC 660V

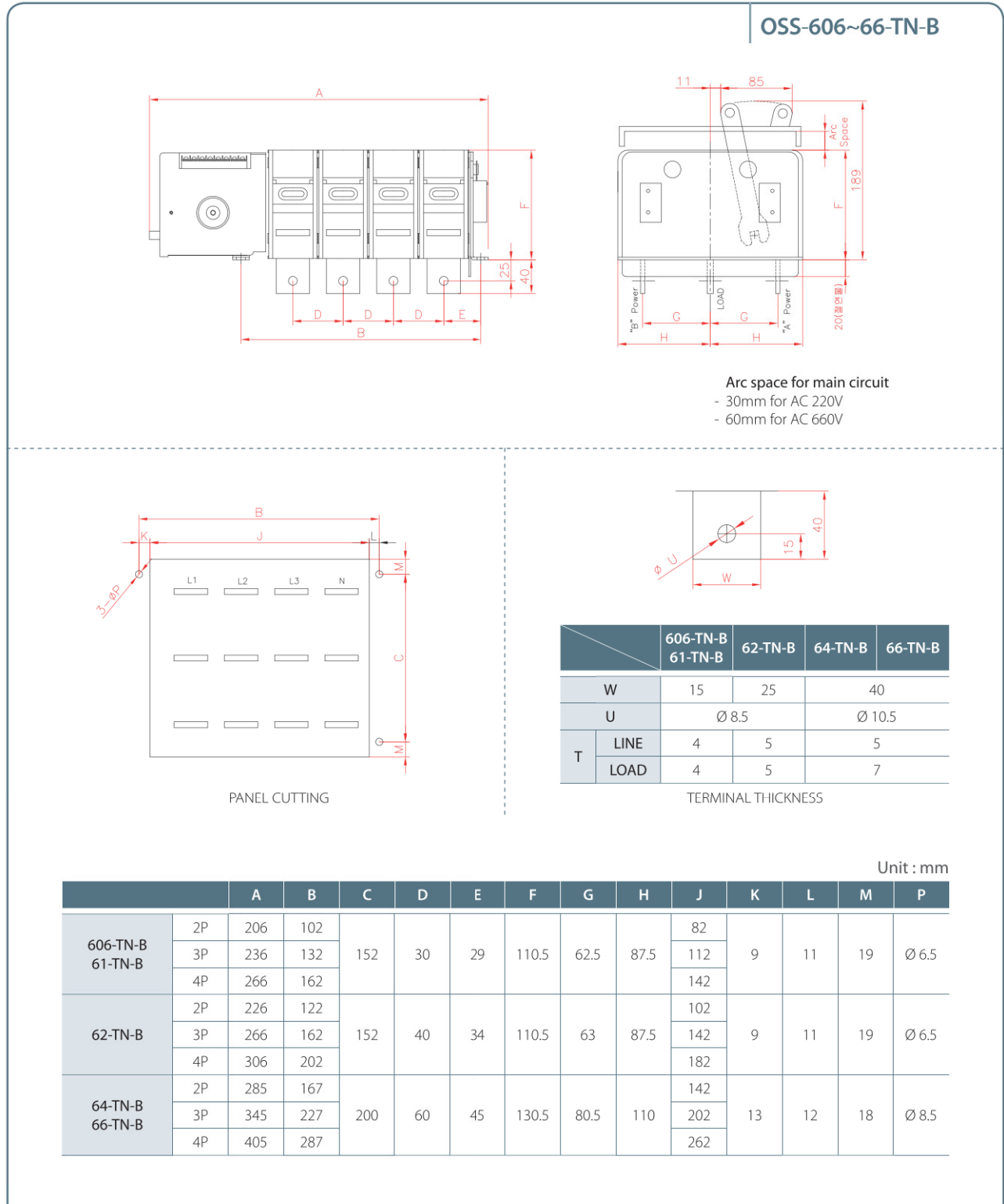
Pole	Dimension (mm)	
	A	B
2P	283	165
3P	343	225
4P	403	285

TN-B Type



ATS(60~630A)

◆ Outline Dimension_ 외형도





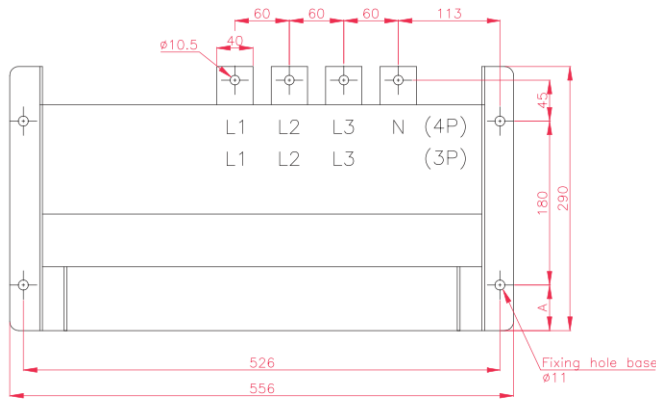
TN-D Type

ATS(100~630A)

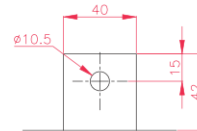
◆ Outline Dimension_ 외형도

Unit : mm

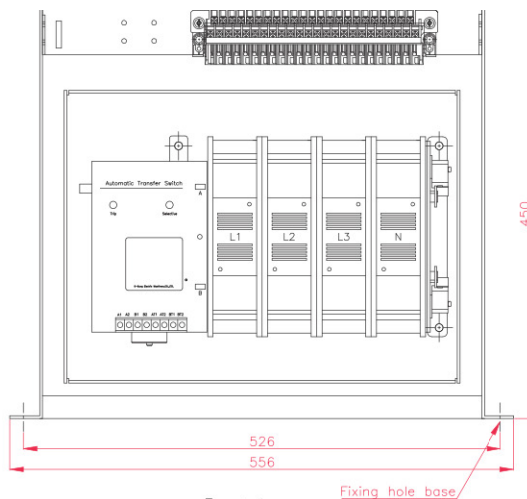
OSS-606~66-TN-D



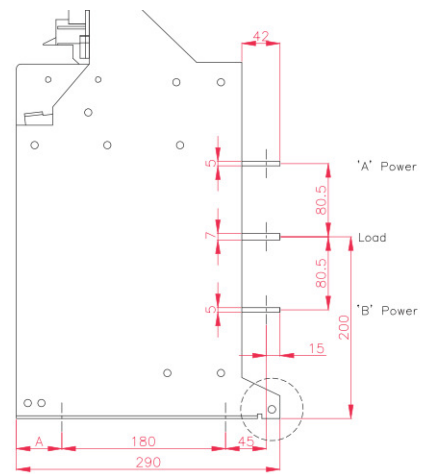
Top view



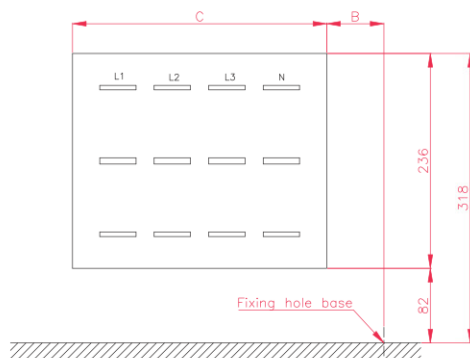
Terminal Thickness		
T	LINE	5
	LOAD	7



Front view



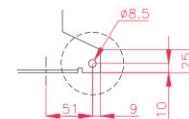
Side view



Panel Cutting

POSITION	A
CONNECTED	50
TEST	87
DISCONNECTED	117

Poles	B	C
3 P	123	220
4 P	63	280



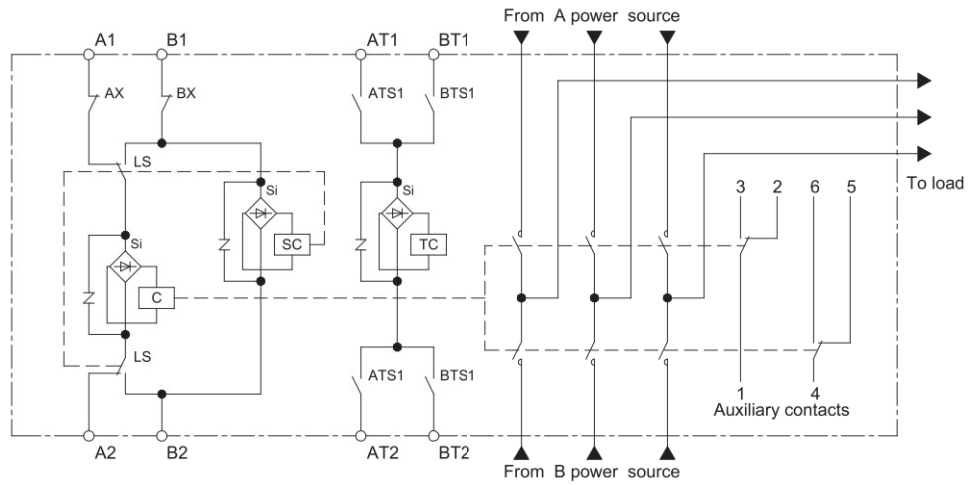
Earthing Hole

TN Type

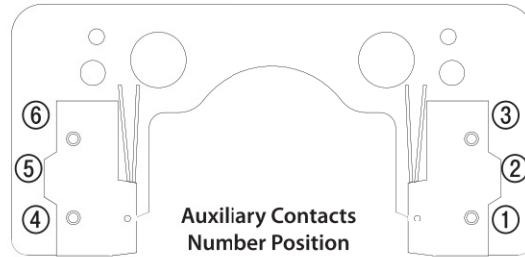


ATS(60~630A)

Circuit Diagram (회로도)

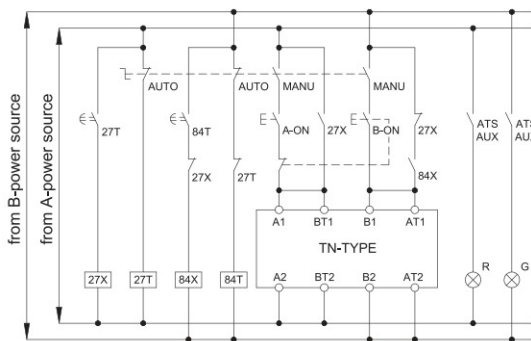


A1, A2	A-Power Closing Terminal	LS	Selective Switch	SC	Selective Coil
B1, B2	B-Power Closing Terminal	Si	Silicon Rectifier	AX, BX	Closing Control Switch
AT1, AT2	A-Power Tripping Terminal	C	Closing Coil	ATS, BTS	Tripping Control Switch
BT1, BT2	B-Power Tripping Terminal	TC	Tripping Coil	1~6	Indication Contacts

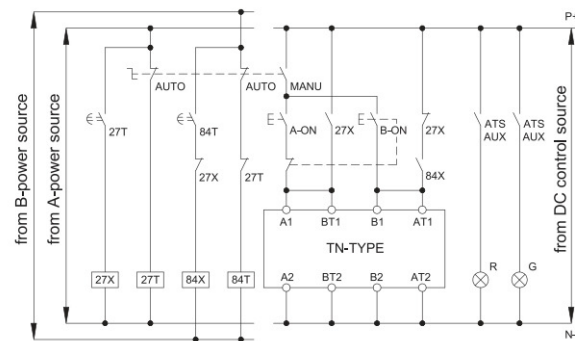


Wiring Diagram (결선도)

Control Voltage AC



Control Voltage DC



27X	Source-A Operating Relay	84X	Source-B Operating Relay
27T	27X Operating Delay Timer	84T	B-Power Closing Delay Timer
AUTO	Automatic Operation	MANU	Manual Operation