



ISO 9001, ISO 14001



# Automatic Transfer Switches



**COMPAC**  
**ELECTRIC**

# Contents

## T3, TB3 Type (100~600A) 04

Information to Order  
Features  
Application and Selection External  
View ( Specification  
Outline Dimension

## TO, TBO Type (100~400A) 09

Information to Order  
Features  
Specification  
Outline Dimension

## T3, TB3 / TO, TBO Type 13

Wiring Diagram

## TN, TBN Type (60~600A) 14

Information to Order  
Features  
External View  
Application and Selection  
Specification  
Outline Dimension  
Wiring Diagram

## PC Type (800~6300A) 19

Information to Order  
External View  
Features  
Specification  
Outline Dimension

## PSO Type (400~6300A) 27

Information to Order  
External View  
Features  
Specification  
Outline Dimension

## PC / PSO Type 33

Wiring Diagram

## PCN Type (800~6300A) 34

Information to Order  
External View  
Features  
Specification  
Outline Dimension  
Circuit Diagram

## Technical Details 46

## Safety Manual 47



# T3, TB3 Type

ATS(100~600A)

## ◆ Information to Order

6□ - □ - □P - □ - □c  
A B C D E

### A Rated Current

|      |      |      |      |
|------|------|------|------|
| 1    | 2    | 4    | 6    |
| 100A | 200A | 400A | 600A |

### B Connection

- T3 : Front
- TB3 : Back

### C Number of Poles

- 2 : 2P
- 3 : 3P
- 4 : 4P

### D Operation Voltage

- A1 : AC 110V
- A2 : AC 220V
- D1 : DC 110V
- D2 : DC 125V

### E Aux Switch

- 1 : 1 c
- 2 : 2 c

## ◆ Features

#### ■ Direct transfer method

A ⇒ B, B ⇒ A

#### ■ One-coil mechanism

One-coil mechanism is applied

#### ■ Excellent Breaking Capacity

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

#### ■ Transfer indicator provided

Transfer indicator is fitted to indicate the transfer status.

#### ■ Perfect transfer mechanism

By spring transfer mechanism, ATS can be completely and perfectly transferred. There will be no unattached position in any case.

#### ■ Mechanically Interlock

Electrically held and mechanically interlock to prevent parallel two live source.

#### ■ Protection against the remaining power source

Mechanical protection against the contact confliction caused by remaining power source of input and load side.

#### ■ Last Break, 1st make Neutral contact

Last Break, 1st make Neutral contact to reduce nuisance tripping in the ground fault protection system. IEEE 242 (Clause 7.5.5)

#### ■ Construction for Safety

For safe operation, molded construction is employed on breaking parts.

#### ■ Compact & Lightweight design

Compact & lightweight design makes the minimized mounting space and convenient installation



## T3, TB3 Type

ATS(100~600A)

### ◆ Application and Selection

#### ■ 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.

#### ■ Selection of TR Capacity

TR capacity should be selected more than the value calculated by the following formula.

Operation Voltage x Operation Current x 0.5 = ( )VA  
 e.g.) Operation Voltage AC 220V, Operation Current 4A  
 $220 \times 4 \times 0.5 = 440\text{VA}$ ,  
 TR capacity of more than 440VA is recommended.

#### ■ 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.

#### ■ Selection of Control Relay

The capacity of UVR, Operating Relay and Timer contactor should be higher than ATS operating current.

Note : If the control power source is not stable, it is recommended to use Automatic Voltage Regulator.

#### ■ Caution on operation of manual handle

Manual operation of ATS should be done for the emergency and maintenance purpose while no load condition only.





## ATS(100~600A)



Diagram illustrating the components of a 600 A Air Circuit Breaker (ACB):

- On/Off Indicator
- Manual Lever Inlet
- Circuit Diagram
- Control Circuit Terminal Block
- Main Circuit Terminal for Load
- Contacts
- Circuit Terminal for "A" Power
- Arc-Extinguishing Chamber
- Aux Switch
- Circuit Terminal for "B" Power

| TYPE                                      |                       | 61-T3<br>61-TB3                                                                                                                  |  |          | 62-T3<br>62-TB3 |    |       | 64-T3<br>64-TB3 |    |       | 66-T3<br>66-TB3 |    |       |       |    |
|-------------------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------|--|----------|-----------------|----|-------|-----------------|----|-------|-----------------|----|-------|-------|----|
| Rated Operational Voltage                 |                       | Ue                                                                                                                               |  | AC 600 V |                 |    |       |                 |    |       |                 |    |       |       |    |
| Rated Current                             |                       | Ie                                                                                                                               |  | 100 A    |                 |    | 200 A |                 |    | 400 A |                 |    | 600 A |       |    |
| Neutral Phase Current                     |                       |                                                                                                                                  |  |          | 100 A           |    |       | 200 A           |    |       | 400 A           |    |       | 600 A |    |
| Kind of Throw                             |                       | Double Throw                                                                                                                     |  |          |                 |    |       |                 |    |       |                 |    |       |       |    |
| Connection                                |                       | Front ( T3), Back ( TB3)                                                                                                         |  |          |                 |    |       |                 |    |       |                 |    |       |       |    |
| Number of Poles                           |                       |                                                                                                                                  |  | 2P       | 3P              | 4P | 2P    | 3P              | 4P | 2P    | 3P              | 4P | 2P    | 3P    | 4P |
| Weight [kg]                               |                       |                                                                                                                                  |  | 7        | 8               | 9  | 9     | 10              | 12 | 16    | 19              | 22 | 16    | 19    | 22 |
| Rated Short-Time Withstand Current (1sec) |                       | Icw                                                                                                                              |  | 5 kA     |                 |    | 10 kA |                 |    | 12 kA |                 |    | 12 kA |       |    |
| Rated Short-Circuit Making Capacity       |                       | Icm                                                                                                                              |  | 7.5 kA   |                 |    | 17 kA |                 |    | 24 kA |                 |    | 24 kA |       |    |
| Switching Capacity                        |                       | AC-33B (10 Ie making / 10 Ie breaking, Ie ≤ 100A cos Ø= 0.45, Ie > 100A cos Ø= 0.35)<br>(1 Ie making / 1 Ie breaking cos Ø= 0.8) |  |          |                 |    |       |                 |    |       |                 |    |       |       |    |
| Switching Frequency                       |                       | 60 Time / Hour                                                                                                                   |  |          |                 |    |       |                 |    |       |                 |    |       |       |    |
| Operating Current peak                    | DC 110V ~ 125V        | 18 A                                                                                                                             |  |          |                 |    |       | 25 A            |    |       |                 |    |       |       |    |
|                                           | AC 100V ~ 110V        | 18 A                                                                                                                             |  |          |                 |    |       | 25 A            |    |       |                 |    |       |       |    |
|                                           | AC 200V ~ 240V        | 8 A                                                                                                                              |  |          |                 |    |       | 8 A             |    |       |                 |    |       |       |    |
| Operating Time                            | Change-over Time      | ≤ 130 ms                                                                                                                         |  |          |                 |    |       | ≤ 160 ms        |    |       |                 |    |       |       |    |
|                                           | Opening Time          | ≤ 50 ms                                                                                                                          |  |          |                 |    |       | ≤ 60 ms         |    |       |                 |    |       |       |    |
|                                           | Contact Transfer Time | ≤ 80 ms                                                                                                                          |  |          |                 |    |       | ≤ 120 ms        |    |       |                 |    |       |       |    |
| Number of Operating Cycles                | Without Current       | 250,000                                                                                                                          |  |          |                 |    |       |                 |    |       |                 |    |       |       |    |
|                                           | With Current          | 50,000                                                                                                                           |  |          |                 |    |       |                 |    |       |                 |    |       |       |    |
| Cautions                                  |                       | 1. For complete operation, Besure to provide control source for more than 0.5sec.                                                |  |          |                 |    |       |                 |    |       |                 |    |       |       |    |

# T3, TB3 Type

Automatic Transfer Switches 06 | 07

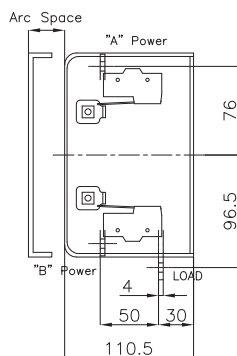
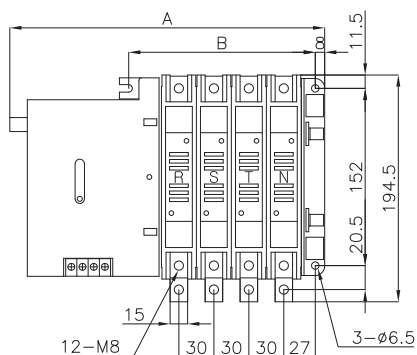


ATS(100~600A)

## ◆ Outline Dimension

Unit : mm

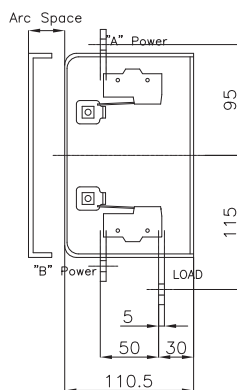
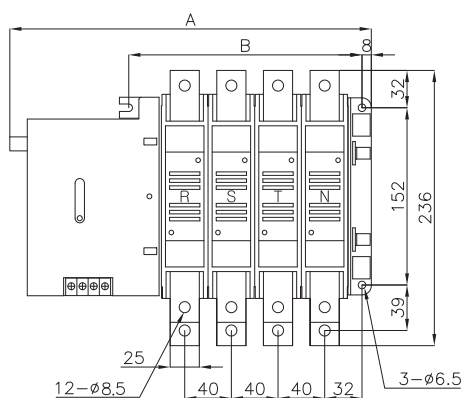
100A



61-T3

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

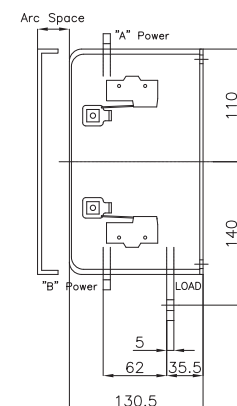
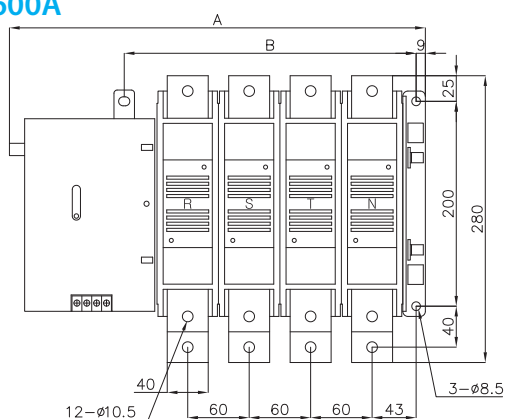
200A



62-T3

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

400A, 600A



64~66-T3

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

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

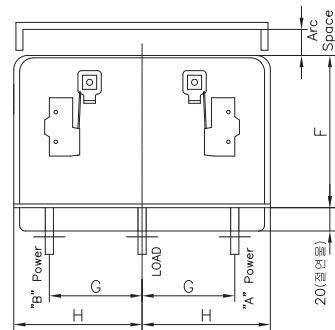
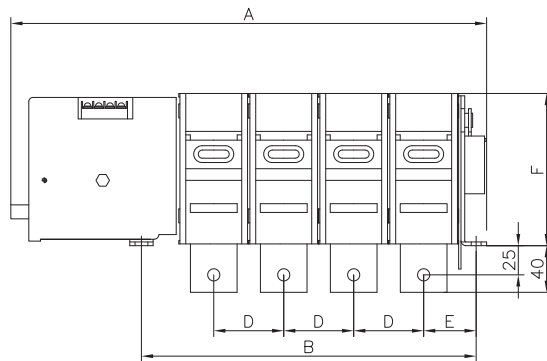


# TB3 Type

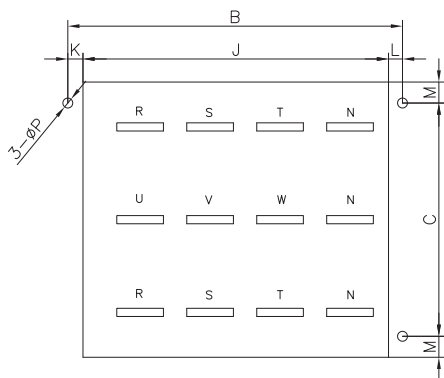
ATS(100~600A)

## ◆ Outline Dimension

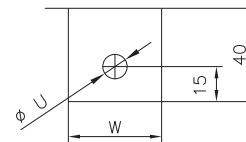
61~66-TB3



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



PANEL CUTTING



|   | 61-TB3 | 62-TB3 | 64-TB3 | 66-TB3 |
|---|--------|--------|--------|--------|
| W | 15     | 25     | 40     |        |
| U | Ø 8.5  |        | Ø 10.5 |        |
| T | LINE   | 4      | 5      | 5      |
|   | LOAD   | 4      | 5      | 7      |

TERMINAL THICKNESS

Unit : mm

|                  |    | A   | B   | C   | D  | E  | F     | G    | H    | J   | K  | L  | M  | P     |
|------------------|----|-----|-----|-----|----|----|-------|------|------|-----|----|----|----|-------|
| 61-TB3           | 2P | 206 | 102 | 152 | 30 | 29 | 110.5 | 62.5 | 87.5 | 82  | 9  | 11 | 19 | Ø 6.5 |
|                  | 3P | 236 | 132 |     |    |    |       |      |      | 112 |    |    |    |       |
|                  | 4P | 266 | 162 |     |    |    |       |      |      | 142 |    |    |    |       |
| 62-TB3           | 2P | 226 | 122 | 152 | 40 | 34 | 110.5 | 63   | 87.5 | 102 | 9  | 11 | 19 | Ø 6.5 |
|                  | 3P | 266 | 162 |     |    |    |       |      |      | 142 |    |    |    |       |
|                  | 4P | 306 | 202 |     |    |    |       |      |      | 182 |    |    |    |       |
| 64-TB3<br>66-TB3 | 2P | 285 | 167 | 200 | 60 | 45 | 130.5 | 80.5 | 110  | 142 | 13 | 12 | 18 | Ø 8.5 |
|                  | 3P | 345 | 227 |     |    |    |       |      |      | 202 |    |    |    |       |
|                  | 4P | 405 | 287 |     |    |    |       |      |      | 262 |    |    |    |       |



# TO, TBO Type

ATS(100~400A)

Automatic Transfer Switches 08 | 09

## ◆ Information to Order

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

### A Rated Current

|      |      |      |
|------|------|------|
| 1    | 2    | 4    |
| 100A | 200A | 400A |

### B Connection

- TO : Front
- TBO : Back

### C Number of Poles

- 4 : 4P

### D Operation Voltage

- A1 : AC 110V
- A2 : AC 220V
- D1 : DC 110V
- D2 : DC 125V

### E Aux Switch

- 1 : 1 c
- 2 : 2 c

## ◆ Features

In addition to every function of OSS-T3, TB3 Type ATS, OSS-TO, TBO Type ATS has additional function of Overlapping Neutral Contact. (ON-ON Type ATS)

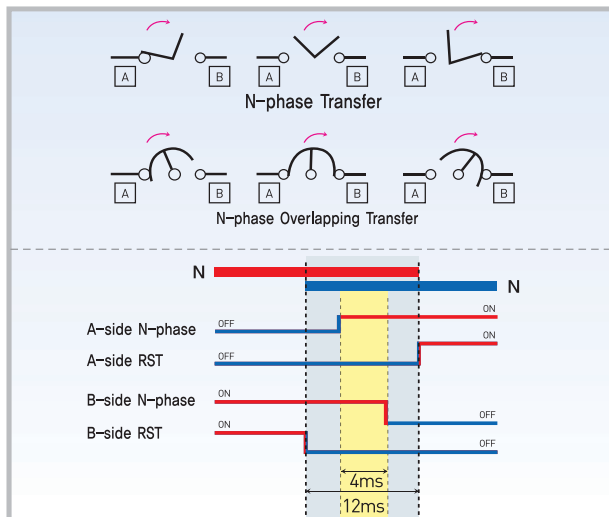
### ■ Function of Overlapping Neutral Contact

When general ATS will be transferred, Arc will be generated between fixed contacts and moving contacts. Thus, current flows between contacts and arc will be eliminated when current will be at zero level.

Eliminating time of arc is 10~12ms. Therefore, various device of load side can be protected when neutral contacts should be opened 10~12ms later than other 3-phases contacts. Load side devices of general ATS cannot be sufficiently protected because opening time gap between neutral contacts and other 3-phases contacts is less than 10ms. In order to solve this problem, Overlapping between neutral contacts of A-power (Normal) and B-power (Emergency) during transfer of switch functions to protect various devices of load side more safely.

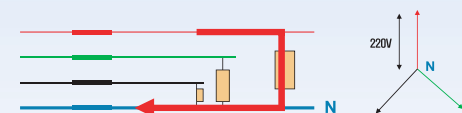
In addition, Non-linear load increases the earth potential and potential difference is occurred between earth and neutral line. When general ATS will be transferred, Neutral line is separated from load and reference potential difference cannot be established. Thus, Floating is occurred and electronic devices can be malfunctioned. When ATS with overlapping neutral contact will be applied, Floating can be protected.

### ■ N-phase Transfer

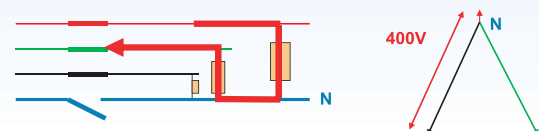


### ■ Limits of 4P Transfer

- Opening neutral wire is forbidden.
- The neutral is the common reference to 3-phases.



- If N-phase will be opened, Ph/Ph voltage can go up to 400V. For transfer of 4P, Overlapping of N-phase is necessary







# TO, TBO Type

ATS(100~400A)

## ◆ Specification

| TYPE                                      |                       | 61-TO<br>61-TBO | 62-TO<br>62-TBO                                                                                                                  | 64-TO<br>64-TBO |       |
|-------------------------------------------|-----------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------|-----------------|-------|
| Rated Operational Voltage                 |                       | Ue              | AC 600 V                                                                                                                         |                 |       |
| Rated Current                             |                       | Ie              | 100 A                                                                                                                            | 200 A           | 400 A |
| Neutral Phase Current                     |                       |                 | 100 A                                                                                                                            | 200 A           | 400 A |
| Kind of Throw                             |                       |                 | Double Throw                                                                                                                     |                 |       |
| Connection                                |                       |                 | Front ( TO), Back ( TBO)                                                                                                         |                 |       |
| Number of Poles                           |                       |                 | 4P                                                                                                                               | 4P              | 4P    |
| Weight [kg]                               |                       |                 | 9                                                                                                                                | 12              | 22    |
| Rated Short-Time Withstand Current (1sec) |                       | Icw             | 5 kA                                                                                                                             | 10 kA           | 12 kA |
| Rated Short-Circuit Making Capacity       |                       | Icm             | 7.5 kA                                                                                                                           | 17 kA           | 24 kA |
| Switching Capacity                        |                       |                 | AC-33B (10 Ie making / 10 Ie breaking, Ie ≤ 100A cos Ø= 0.45, Ie > 100A cos Ø= 0.35)<br>(1 Ie making / 1 Ie breaking cos Ø= 0.8) |                 |       |
| Switching Frequency                       |                       |                 | 60 Time / Hour                                                                                                                   |                 |       |
| Operating Current peak                    | DC 110V ~ 125V        |                 | 18 A                                                                                                                             | 25 A            |       |
|                                           | AC 100V ~ 110V        |                 | 18 A                                                                                                                             | 25 A            |       |
|                                           | AC 200V ~ 240V        |                 | 8 A                                                                                                                              | 8 A             |       |
| Operating Time                            | Change-over Time      |                 | ≤ 130 ms                                                                                                                         | ≤ 160 ms        |       |
|                                           | Opening Time          |                 | ≤ 50 ms                                                                                                                          | ≤ 60 ms         |       |
|                                           | Contact Transfer Time |                 | ≤ 80 ms                                                                                                                          | ≤ 120 ms        |       |
| Number of Operating Cycles                | Without Current       |                 | 250,000                                                                                                                          |                 |       |
|                                           | With Current          |                 | 50,000                                                                                                                           |                 |       |
| Cautions                                  |                       |                 | 1. For complete operation, Besure to provide control source for more than 0.5sec.                                                |                 |       |





# TO, TBO Type

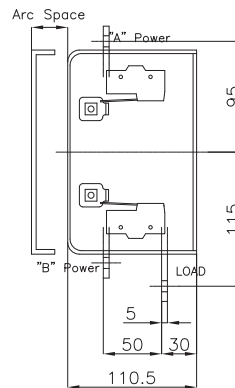
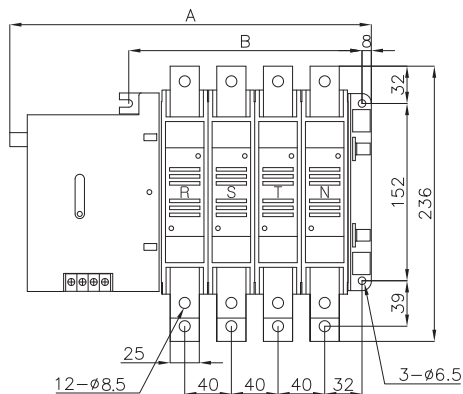
ATS(100~400A)

Automatic Transfer Switches 10111

## ◆ Outline Dimension

Unit : mm

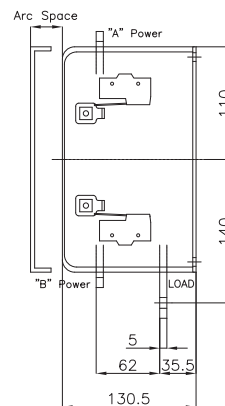
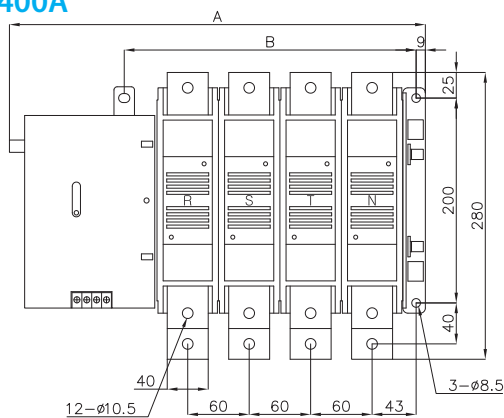
100A



61-TO

|      | Dimension (mm) |     |
|------|----------------|-----|
| Pole | A              | B   |
| 4P   | 304            | 200 |

200A, 400A



62~64-TO

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

|      | Dimension (mm) |     |
|------|----------------|-----|
| Pole | A              | B   |
| 4P   | 403            | 285 |



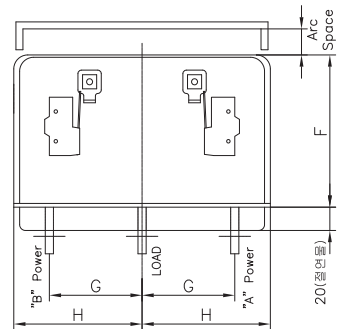
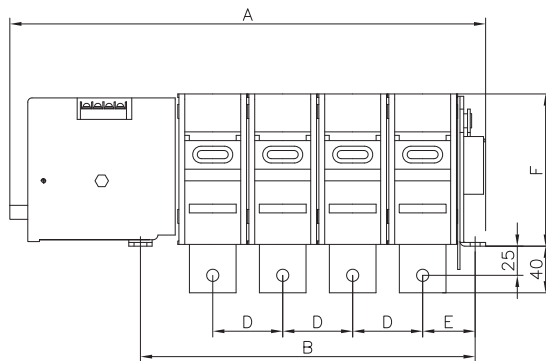


# TBO Type

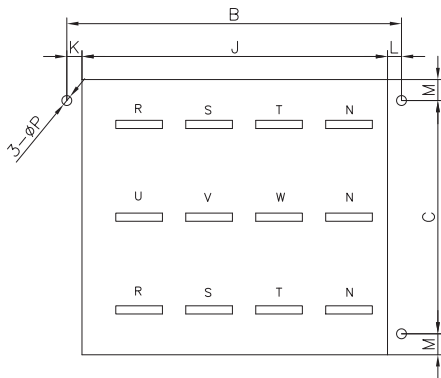
## ATS(100~400A)

### ◆ Outline Dimension

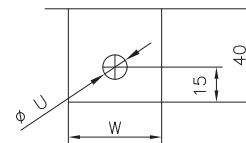
61~64-TBO



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



PANEL CUTTING



|   | 61-TBO | 62-TBO | 64-TBO |
|---|--------|--------|--------|
| W | 15     | 25     | 40     |
| U | Ø 8.5  |        | Ø 10.5 |
| T | LINE   | 4      | 5      |
|   | LOAD   | 4      | 5      |

TERMINAL THICKNESS

Unit : mm

|                  |    | A   | B   | C   | D  | E  | F     | G    | H    | J   | K  | L  | M  | P     |
|------------------|----|-----|-----|-----|----|----|-------|------|------|-----|----|----|----|-------|
| 61-TBO           | 4P | 306 | 202 | 152 | 40 | 34 | 110.5 | 63   | 87.5 | 182 | 9  | 11 | 19 | Ø 6.5 |
| 64-TBO<br>66-TBO | 4P | 405 | 287 | 200 | 60 | 45 | 130.5 | 80.5 | 110  | 262 | 13 | 12 | 18 | Ø 8.5 |



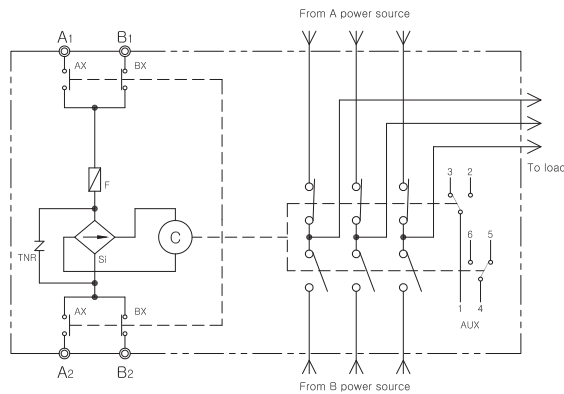
# T3, TB3 / TO, TBO Type

Automatic Transfer Switches 12113

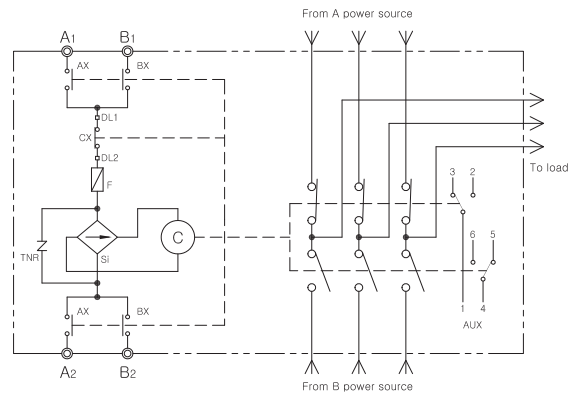
## ATS

### Circuit Diagram

AC 100~240V



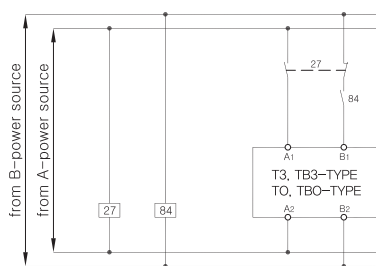
DC 110~125V



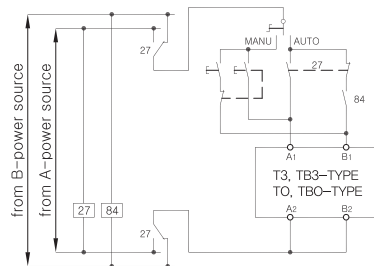
|        |                          |            |                                |    |                   |
|--------|--------------------------|------------|--------------------------------|----|-------------------|
| A1, A2 | A-Power Closing Terminal | AX, BX, CX | Closing Switch                 | Si | Silicon Rectifier |
| B1, B2 | B-Power Closing Terminal | B1, B2     | Aux Switch                     | F  | Fuse              |
| C      | Closing coil             | TNR        | Varistor for Surge suppression |    |                   |

### Typical Operating Circuit

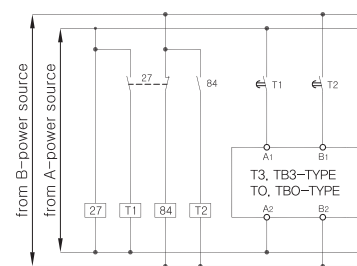
Standard



In Case of using a changeover switch

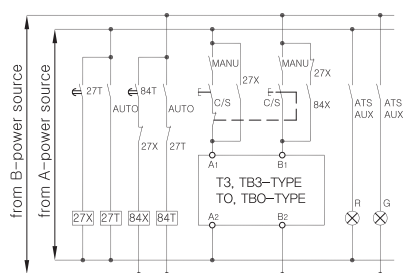


In Case of using a timer

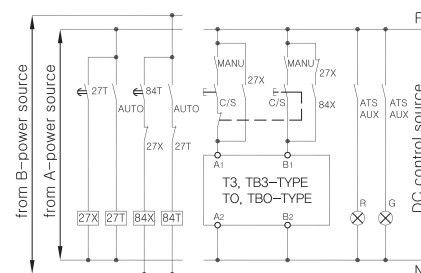


### Wiring Diagram

AC Operating and Control



DC Operating and Control



|            |                           |     |                           |
|------------|---------------------------|-----|---------------------------|
| 27X        | Source-A Operating Relay  | 84X | Source-B Operating Relay  |
| 27T        | 27X Operating Delay Relay | 84T | 84X Operating Delay Relay |
| AUTO, MANU | Automatic, Manual         | C/S | Control Switch            |



# TN, TBN Type

ATS(60~600A)

## ◆ Information to Order

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

### A Rated Current

|     |      |      |      |      |
|-----|------|------|------|------|
| 06  | 1    | 2    | 4    | 6    |
| 60A | 100A | 200A | 400A | 600A |

### C Number of Poles

● 2: 2P ● 3: 3P ● 4: 4P

### B Connection

● TN : Front ● TBN : Back

### D Operation Voltage

● A1 : AC 110V ● D1 : DC 110V  
● A2 : AC 220V ● D2 : DC 125V

### E Aux Switch

● 1 : 1 c  
● 2 : 2 c

## ◆ Features

### ■ Off position stop method

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

And also, instantaneous transfer can be performed by operating signal.

A ⇒ B, B ⇒ A

### ■ 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

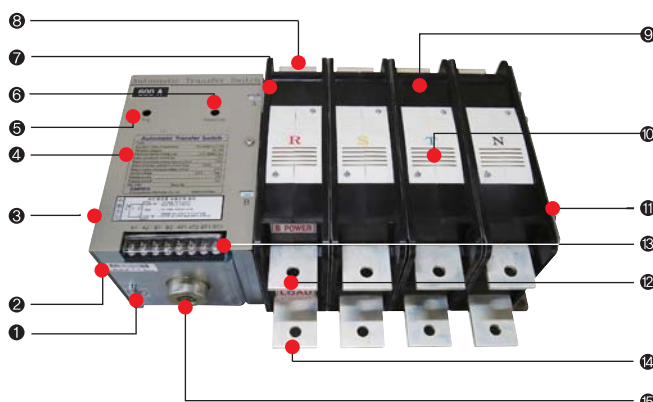
Last Break, 1st make Neutral contact to reduce nuisance tripping in the ground fault protection system. IEEE 242 (Clause 7.5.5)

### ■ Construction for Safety

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

## ◆ External View

- 1 Earthing Terminal
- 2 Manual Operating Shaft (Anti-Clockwise)
- 3 Circuit Diagram
- 4 Name Plate
- 5 Trip Button
- 6 Selective Button for "B" Power-Closing
- 7 On/Off Indicator
- 8 Circuit Terminal for "A" Power
- 9 Contacts
- 10 Arc-Extinguishing Chamber
- 11 Aux Switch
- 12 Circuit Terminal for "B" Power
- 13 Control Circuit Terminal Block
- 14 Main Circuit Terminal for Load
- 15 Amateur for Closing Coil





## TN, TBN Type

## ATS(60~600A)

## ◆ Application and Selection

### ■ Applicable Standards

- IEC 60947-6-1      - JEM 1038      - 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.

## ◆ Specification

| TYPE                                      |                   |          | 606-TN, TBN<br>61-TN, TBN                                                                                                                                                                                                                                                                                              |    |    | 62-TN, TBN |    |    | 64-TN, TBN<br>66-TN, TBN |    |    |
|-------------------------------------------|-------------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|------------|----|----|--------------------------|----|----|
| Rated Operational Voltage                 |                   | Ue       | AC 600 V                                                                                                                                                                                                                                                                                                               |    |    |            |    |    |                          |    |    |
| Rated Current                             |                   | Ie       | 60 A, 100 A                                                                                                                                                                                                                                                                                                            |    |    | 200 A      |    |    | 400 A, 600 A             |    |    |
| Neutral Phase Current                     |                   |          | 60 A, 100 A                                                                                                                                                                                                                                                                                                            |    |    | 200 A      |    |    | 400 A, 600 A             |    |    |
| Kind of Throw                             |                   |          | Double Throw                                                                                                                                                                                                                                                                                                           |    |    |            |    |    |                          |    |    |
| Connection                                |                   |          | Front ( TN), Back ( TBN)                                                                                                                                                                                                                                                                                               |    |    |            |    |    |                          |    |    |
| Number of Poles                           |                   |          | 2P                                                                                                                                                                                                                                                                                                                     | 3P | 4P | 2P         | 3P | 4P | 2P                       | 3P | 4P |
| Weight [kg]                               |                   |          | 7                                                                                                                                                                                                                                                                                                                      | 8  | 9  | 9          | 10 | 12 | 16                       | 19 | 22 |
| Rated Short-Time Withstand Current (1sec) |                   | Icw      | 5 kA                                                                                                                                                                                                                                                                                                                   |    |    | 10 kA      |    |    | 12 kA                    |    |    |
| Rated Short-Circuit Making Capacity       |                   | Icm      | 7.5 kA                                                                                                                                                                                                                                                                                                                 |    |    | 17 kA      |    |    | 24 kA                    |    |    |
| Switching Capacity                        |                   |          | AC-33B (10 Ie making / 10 Ie breaking, Ie ≤ 100A cos Ø= 0.45, Ie > 100A cos Ø= 0.35)<br>(1 Ie making / 1 Ie breaking cos Ø= 0.8)                                                                                                                                                                                       |    |    |            |    |    |                          |    |    |
| Switching Frequency                       |                   |          | 60 Time / Hour                                                                                                                                                                                                                                                                                                         |    |    |            |    |    |                          |    |    |
| Operating Current 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 = 3A, AC110V = 3A, AC 220V = 3A                                                                                                                                                                                                                                                                                |    |    |            |    |    |                          |    |    |
| Operating Time                            | “A”Power          | Making   | ≤ 55 ms                                                                                                                                                                                                                                                                                                                |    |    | ≤ 55 ms    |    |    | ≤ 60 ms                  |    |    |
|                                           |                   | Breaking | ≤ 20 ms                                                                                                                                                                                                                                                                                                                |    |    | ≤ 20 ms    |    |    | ≤ 25 ms                  |    |    |
|                                           | “B”Power          | Making   | ≤ 60 ms                                                                                                                                                                                                                                                                                                                |    |    | ≤ 60 ms    |    |    | ≤ 80 ms                  |    |    |
|                                           |                   | Breaking | ≤ 20 ms                                                                                                                                                                                                                                                                                                                |    |    | ≤ 20 ms    |    |    | ≤ 25 ms                  |    |    |
| Number of Operating Cycles                | Without Current   |          | 10,000                                                                                                                                                                                                                                                                                                                 |    |    |            |    |    |                          |    |    |
|                                           | With Current      |          | 5,000                                                                                                                                                                                                                                                                                                                  |    |    |            |    |    |                          |    |    |
| Cautions                                  |                   |          | 1. For complete operation, Be sure to provide control source for more than 0.5sec.<br>2. When control source will be provided to A side and B side simultaneously, Coil may be damaged.<br>3. Control Relay should be selected considering sufficient contact capacity to withstand against more than control current. |    |    |            |    |    |                          |    |    |





# TN Type

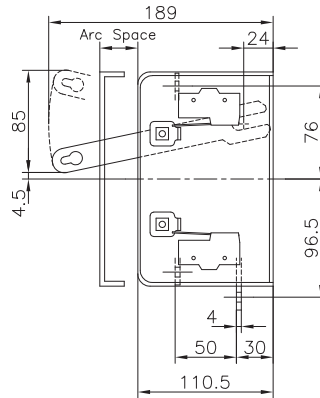
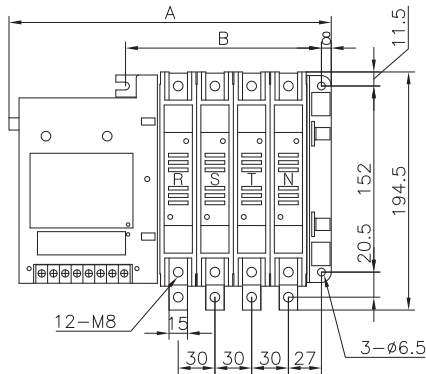
ATS(60~600A)

## ◆ Outline Dimension

Unit : mm

### 60A, 100A

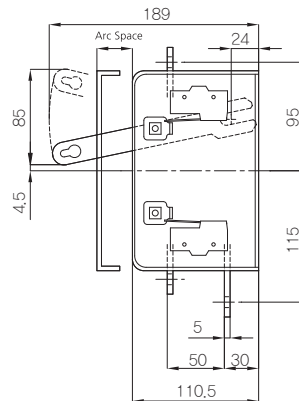
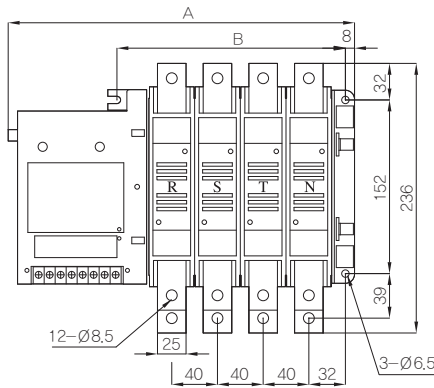
### 606~61-TN



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

### 200A

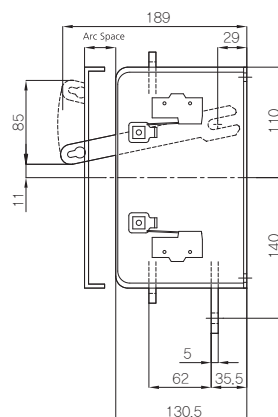
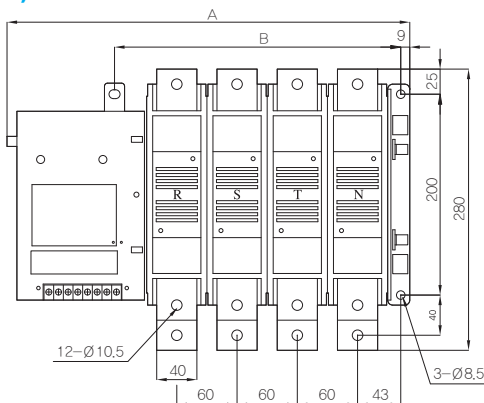
### 62-TN



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

### 400A, 600A

### 64~66-TN



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

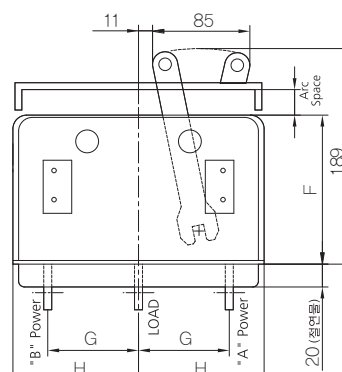
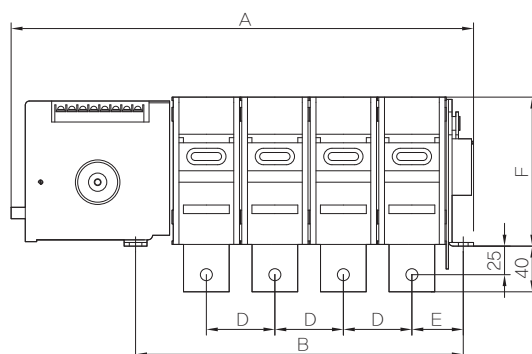
|      | Dimension (mm) |     |
|------|----------------|-----|
| Pole | A              | B   |
| 2P   | 283            | 165 |
| 3P   | 343            | 225 |
| 4P   | 403            | 285 |



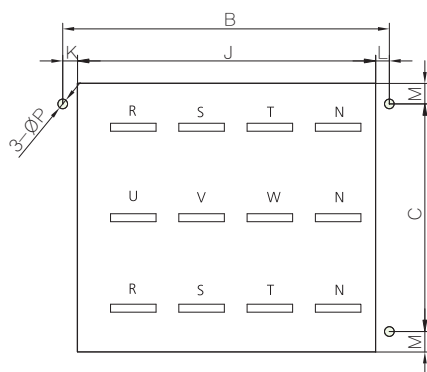
## ATS(60~600A)

### ◆ Outline Dimension

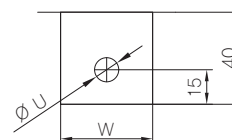
#### 606~66-TBN



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



PANEL CUTTING



|   | 606-TBN<br>61-TBN | 62-TBN | 64-TBN | 66-TBN |
|---|-------------------|--------|--------|--------|
| W | 15                | 25     | 40     |        |
| U | Ø 8.5             |        | Ø 10.5 |        |
| T | LINE              | 4      | 5      | 5      |
|   | LOAD              | 4      | 5      | 7      |

TERMINAL THICKNESS

Unit : mm

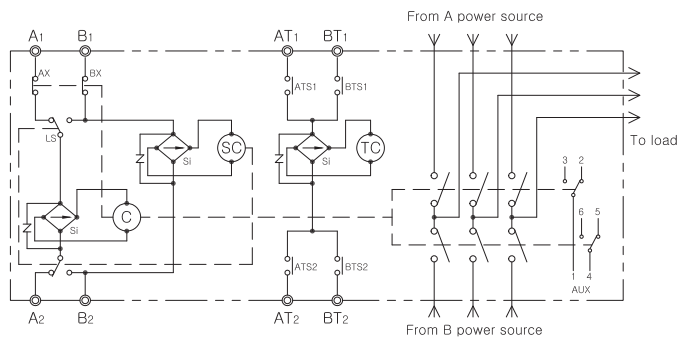
|                   |    | A   | B   | C   | D  | E  | F     | G    | H    | J   | K  | L  | M  | P     |
|-------------------|----|-----|-----|-----|----|----|-------|------|------|-----|----|----|----|-------|
| 606-TBN<br>61-TBN | 2P | 206 | 102 | 152 | 30 | 29 | 110.5 | 62.5 | 87.5 | 82  | 9  | 11 | 19 | Ø 6.5 |
|                   | 3P | 236 | 132 |     |    |    |       |      |      | 112 |    |    |    |       |
|                   | 4P | 266 | 162 |     |    |    |       |      |      | 142 |    |    |    |       |
| 62-TBN            | 2P | 226 | 122 | 152 | 40 | 34 | 110.5 | 63   | 87.5 | 102 | 9  | 11 | 19 | Ø 6.5 |
|                   | 3P | 266 | 162 |     |    |    |       |      |      | 142 |    |    |    |       |
|                   | 4P | 306 | 202 |     |    |    |       |      |      | 182 |    |    |    |       |
| 64-TBN<br>66-TBN  | 2P | 285 | 167 | 200 | 60 | 45 | 130.5 | 80.5 | 110  | 142 | 13 | 12 | 18 | Ø 8.5 |
|                   | 3P | 345 | 227 |     |    |    |       |      |      | 202 |    |    |    |       |
|                   | 4P | 405 | 287 |     |    |    |       |      |      | 262 |    |    |    |       |



# TN, TBN Type

ATS(60~600A)

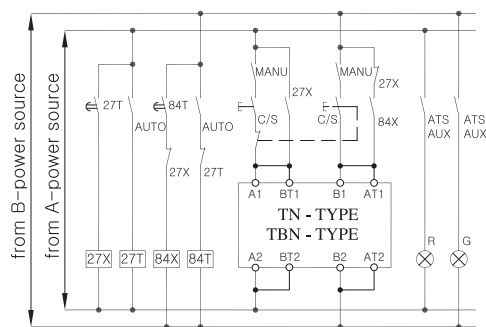
## Circuit Diagram



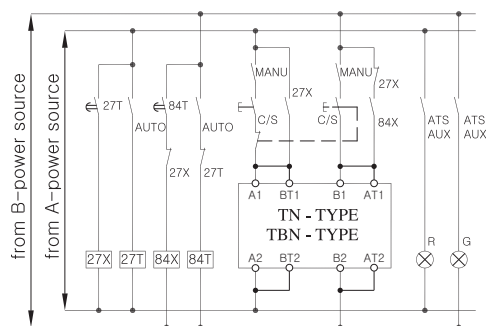
|          |                           |                        |                     |
|----------|---------------------------|------------------------|---------------------|
| A1, A2   | A-Power Closing Terminal  | C                      | Closing Coil        |
| B1, B2   | B-Power Closing Terminal  | SC                     | Selective Coil      |
| AT1, AT2 | A-Power Tripping Terminal | TC                     | Tripping Coil       |
| BT1, BT2 | B-Power Tripping Terminal | AX, BX                 | Control Switch      |
| AUX      | AUX Switch                | ATS1, ATS2, BTS1, BTS2 | Trip Control Switch |
| Si       | Silicon Rectifier         | LS                     | Selective Switch    |

## Wiring Diagram

### AC Operating and Control



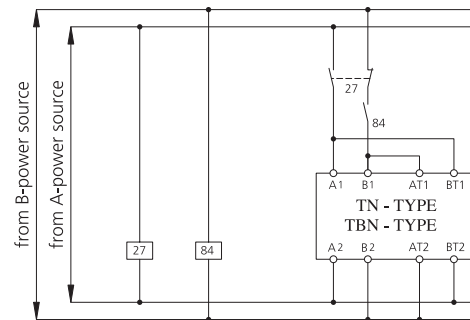
### DC Operating and Control



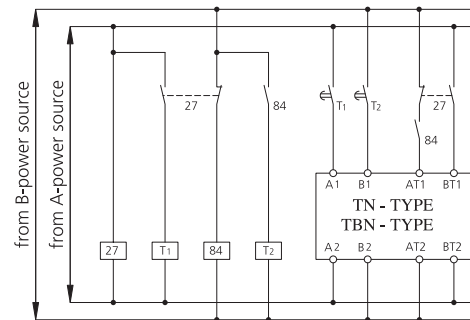
|            |                           |     |                           |
|------------|---------------------------|-----|---------------------------|
| 27X        | Source-A Operating Relay  | 84X | Source-B Operating Relay  |
| 27T        | 27X Operating Delay Relay | 84T | 84X Operating Delay Relay |
| AUTO, MANU | Automatic, Manual         | C/S | Control Switch            |

## Typical Operating Circuit

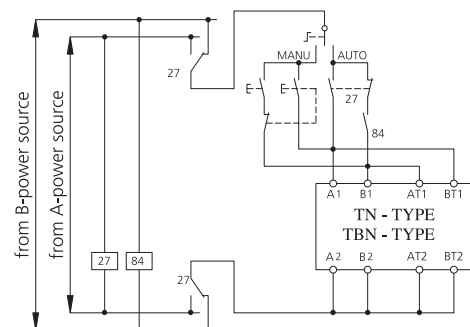
### Standard



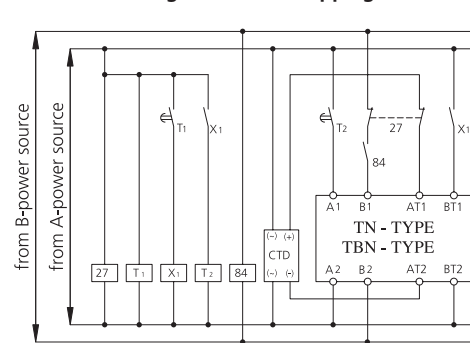
### In Case of using a timer



### In Case of using a changeover switch



### In Case of using a condensor tripping device



# PC Type

## ATS(800~6300A)



### ◆ Information to Order

6 ☐ - PC - ☐ P - ☐ - ☐  
**A** **B** **C** **D**

#### A Rated Current

|      |       |       |       |       |       |       |       |       |       |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 08   | 10    | 12    | 16    | 20    | 25    | 32    | 40    | 50    | 63    |
| 800A | 1000A | 1250A | 1600A | 2000A | 2500A | 3200A | 4000A | 5000A | 6300A |

#### B Number of Poles

- 3 : 3P
- 4 : 4P

#### C Operating Voltage

- A1 : AC 110V
- A2 : AC 220V
- D1 : DC 110V
- D2 : DC 125V

#### D Mounting System

- F : Fixed
- D : Draw out

### ◆ External View



|   |                           |
|---|---------------------------|
| ① | Arc-Extinguishing Chamber |
| ② | Manual Lever Inlet        |
| ③ | Manual Lever              |
| ④ | Name Plate                |
| ⑤ | Lifting Hook              |
| ⑥ | Circuit Diagram           |
| ⑦ | ON-OFF Indicator          |
| ⑧ | Terminal Block            |

### ◆ Features

- **Direct transfer method**  
A ⇒ B, B ⇒ A
- **One coil mechanism**  
One coil mechanism is applied
- **Transfer indicator provided**  
Transfer indicator is fitted to indicate the transfer status.
- **Easier busbar arrangement**  
If the ATS is installed with the ACB in switchgear, Busbar can be easily arranged.
- **Fixed Type & Drawout Type available**  
Fixed Type and Drawout Type, Can satisfy a variety of customer needs.
- **Quick replacement of ATS**  
If malfunction occurs, Drawout Type of ATS can be changed within 5 minutes.
- **Perfect transfer mechanism**  
By spring transfer mechanism, ATS can be completely and perfectly transferred. There will be NO unattached position in any case.
- **Sufficient current capacity**  
Sufficient current carrying contacts are designed to withstand against over current.
- **Minimized opening & closing impact**  
Opening and closing impact is minimized.
- **Last Break, 1st make Neutral contact**  
Last Break, 1st make Neutral contact to reduce nuisance tripping in the ground fault protection system. IEEE 242 (Clause 7.5.5)



## ATS(800~6300A)

## ◆ Specification

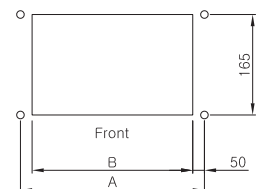
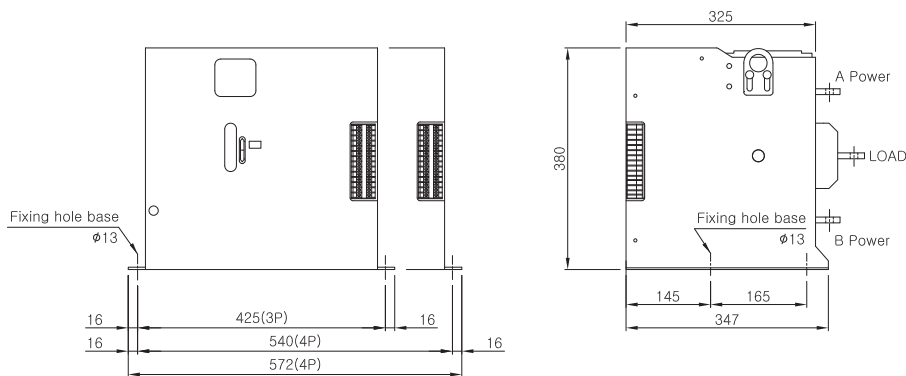
| TYPE                                      |                  |          | 625-PC                                                                                                                                                                                  |     | 632-PC |     | 640-PC |     | 650-PC |     | 663-PC |       |
|-------------------------------------------|------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|--------|-----|--------|-----|--------|-----|--------|-------|
| Rated Operational Voltage                 |                  | Ue       | AC 600 V                                                                                                                                                                                |     |        |     |        |     |        |     |        |       |
| Rated Current                             |                  | Ie       | 2500 A                                                                                                                                                                                  |     | 3200 A |     | 4000 A |     | 5000 A |     | 6300 A |       |
| Neutral Phase Current                     |                  |          | 2500 A                                                                                                                                                                                  |     | 3200 A |     | 4000 A |     | 5000 A |     | 6300 A |       |
| Kind of Throw                             |                  |          | Double Throw                                                                                                                                                                            |     |        |     |        |     |        |     |        |       |
| Connection                                |                  |          | Back                                                                                                                                                                                    |     |        |     |        |     |        |     |        |       |
| Number of Poles                           |                  |          | 3P                                                                                                                                                                                      | 4P  | 3P     | 4P  | 3P     | 4P  | 3P     | 4P  | 3P     | 4P    |
| Weight ( kg)                              | Fixed            |          | 95                                                                                                                                                                                      | 125 | 100    | 130 | 180    | 210 | 195    | 230 | 200    | 250   |
|                                           | Drawout          |          | 110                                                                                                                                                                                     | 140 | 125    | 155 | 220    | 275 | 230    | 285 | 245    | 305   |
| Rated Short-Time Withstand Current (1sec) |                  | Icw      | 50 kA                                                                                                                                                                                   |     |        |     | 65 kA  |     |        |     |        |       |
| Rated Short-Circuit Making Capacity       |                  | Icm peak | 105 kA                                                                                                                                                                                  |     |        |     | 143 kA |     |        |     |        |       |
| Switching Capacity                        |                  |          | AC -33B (10 Ie making / 10 Ie breaking cos Ø= 0.35), (1 Ie making / 1 Ie breaking cos Ø= 0.8)                                                                                           |     |        |     |        |     |        |     |        |       |
| Switching Frequency                       |                  |          | 10 Time / Hour                                                                                                                                                                          |     |        |     |        |     |        |     |        |       |
| Operating Current peak                    | DC 110V ~ 125V   |          | 65 A                                                                                                                                                                                    |     |        |     | 80 A   |     |        |     |        |       |
|                                           | AC 100V ~ 110V   |          | 65 A                                                                                                                                                                                    |     |        |     | 80 A   |     |        |     |        |       |
|                                           | AC 200V ~ 240V   |          | 50 A                                                                                                                                                                                    |     |        |     | 60 A   |     |        |     |        |       |
| Operating Time                            | Change-over Time |          | ≤ 100 ms                                                                                                                                                                                |     |        |     |        |     |        |     |        |       |
|                                           | Opening Time     |          | ≤ 60 ms                                                                                                                                                                                 |     |        |     |        |     |        |     |        |       |
| Number of Operating Cycles                | Without Current  |          | 5,000                                                                                                                                                                                   |     |        |     |        |     |        |     |        | 3,000 |
|                                           | With Current     |          | 3,000                                                                                                                                                                                   |     |        |     |        |     |        |     |        | 1,500 |
| Cautions                                  |                  |          | 1. For complete operation, Be sure to provide control source for more than 0.5sec.<br>2. When control source will be provided to A side and B side simultaneously, Coil may be damaged. |     |        |     |        |     |        |     |        |       |



### ◆ Outline Dimension

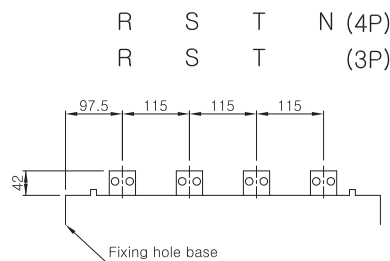
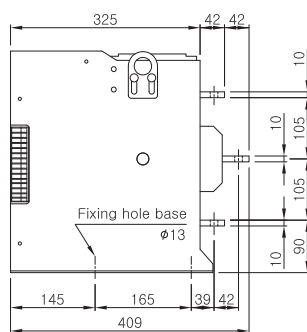
#### 800~1600A Fixed

Unit : mm

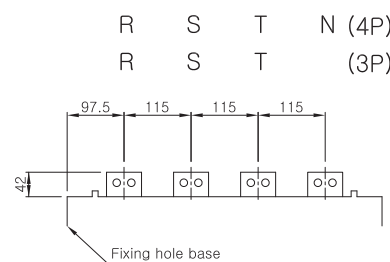
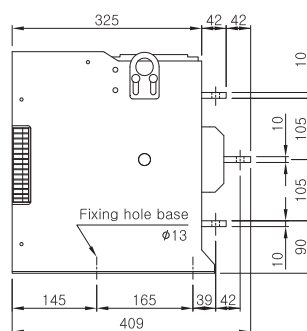
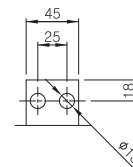


| Poles | A   | B   |
|-------|-----|-----|
| 3P    | 425 | 325 |
| 4P    | 540 | 440 |

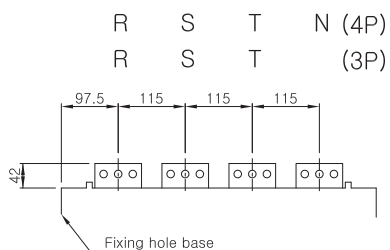
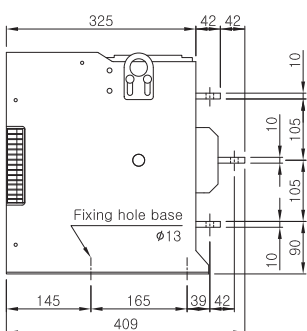
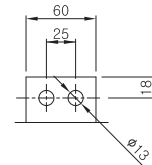
Panel Cutting  
(Fixing Hole)



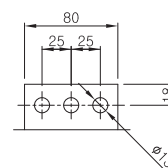
#### 608~610-PC



#### 612-PC



#### 616-PC







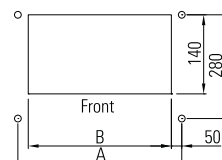
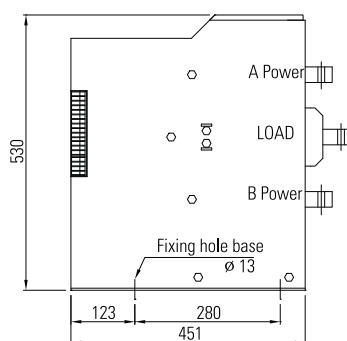
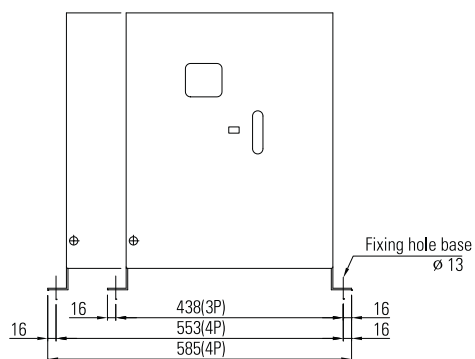
# PC Type

ATS(800~6300A)

## ◆ Outline Dimension

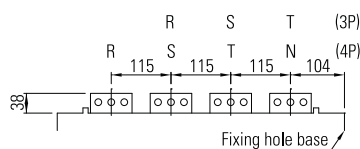
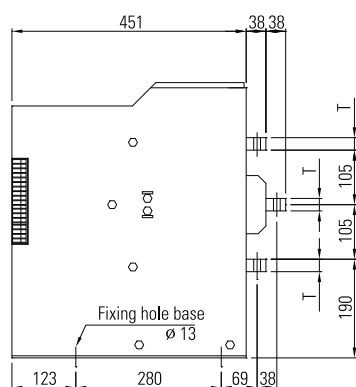
### 2000~3200A Fixed

Unit : mm



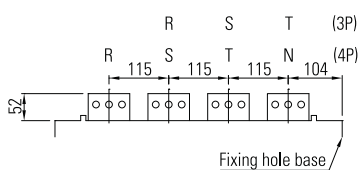
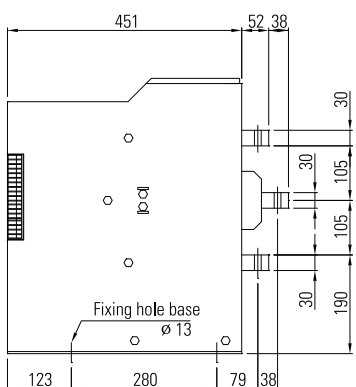
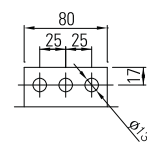
| Poles | A   | B   |
|-------|-----|-----|
| 3P    | 438 | 338 |
| 4P    | 553 | 453 |

Panel Cutting  
(Fixing Hole)

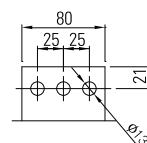


### 620~625-PC

| Current | T  |
|---------|----|
| 2000A   | 15 |
| 2500A   | 24 |



### 632-PC



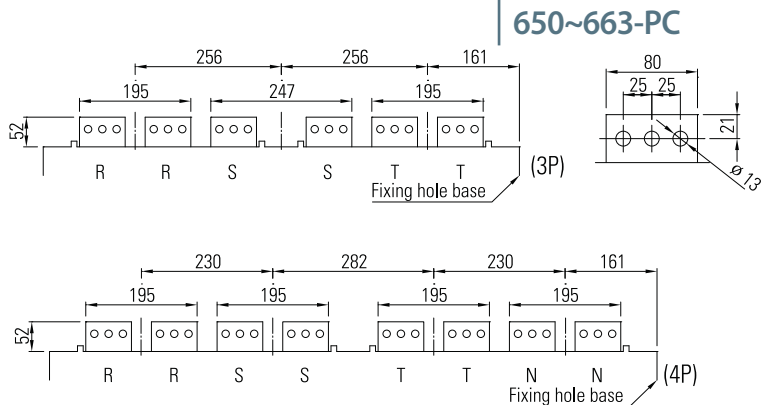
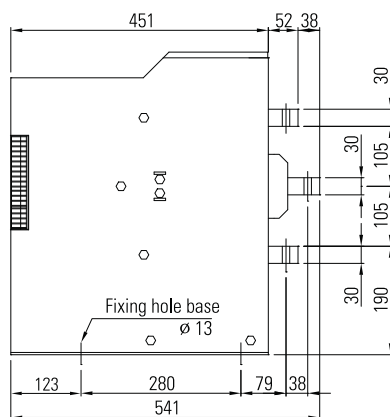
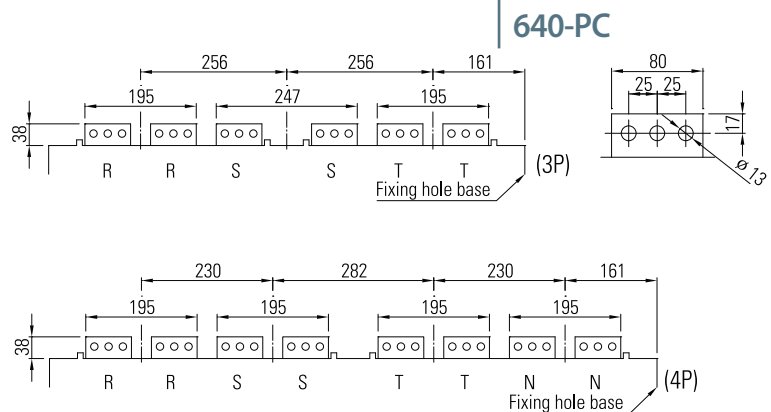
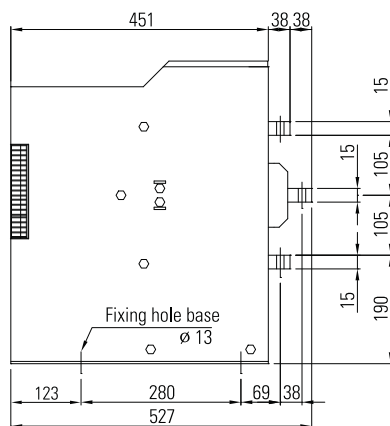
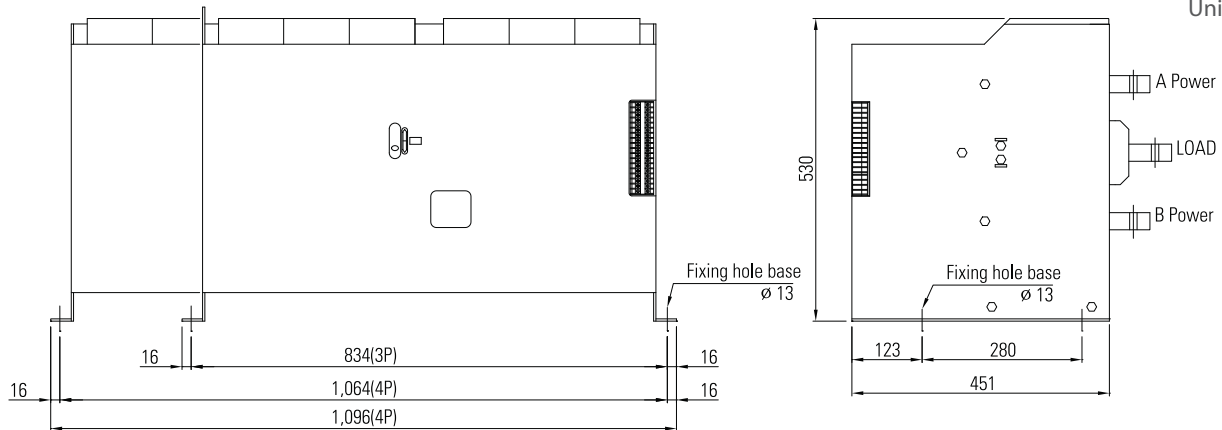


## ATS(800~6300A)

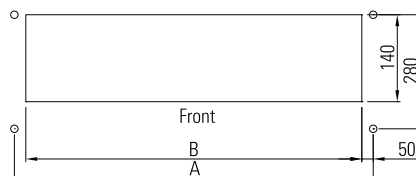
### ◆ Outline Dimension

#### 4000~6300A Fixed

Unit : mm



### Panel cutting (Fixing hole)



| Poles | A    | B   |
|-------|------|-----|
| 3P    | 834  | 734 |
| 4P    | 1064 | 964 |

# PC Type

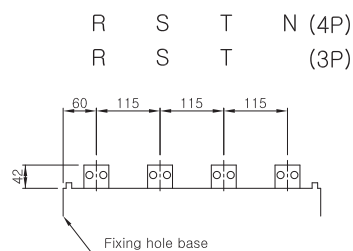
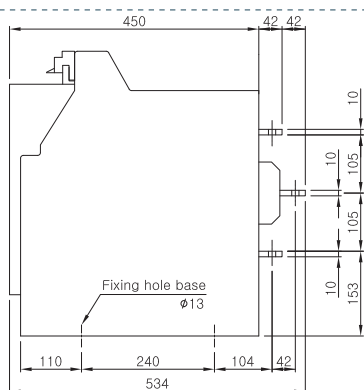
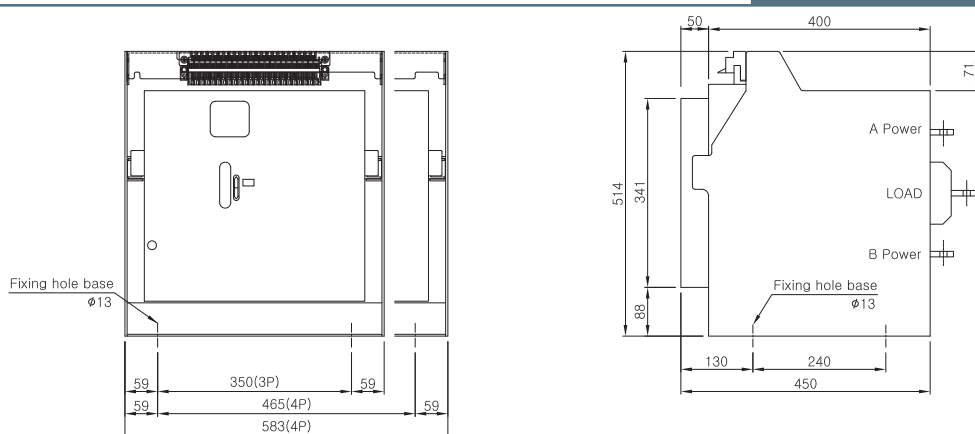
ATS(800~6300A)



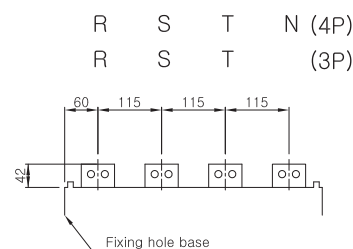
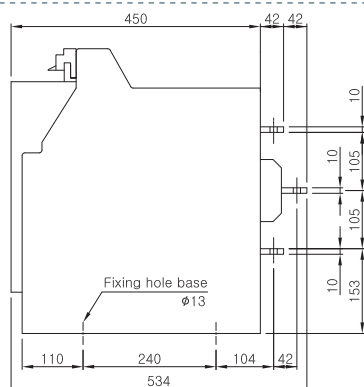
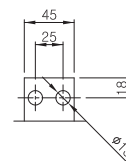
## ◆ Outline Dimension

### 800~1600A Draw Out

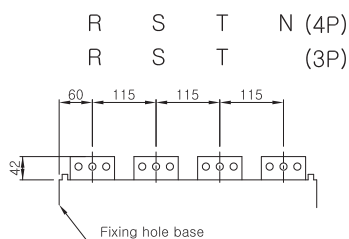
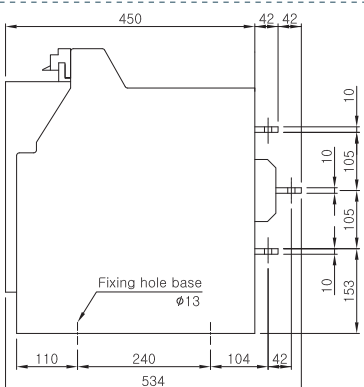
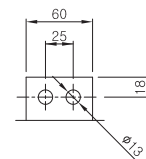
Unit : mm



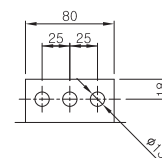
### 608~610-PC



### 612-PC



### 616-PC



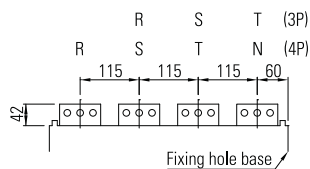
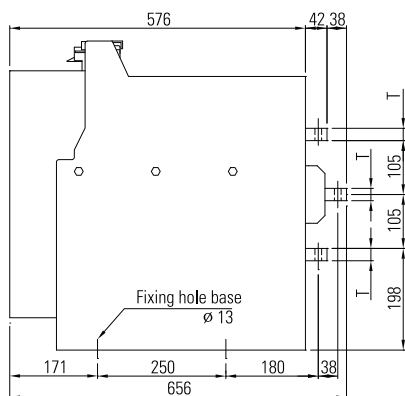
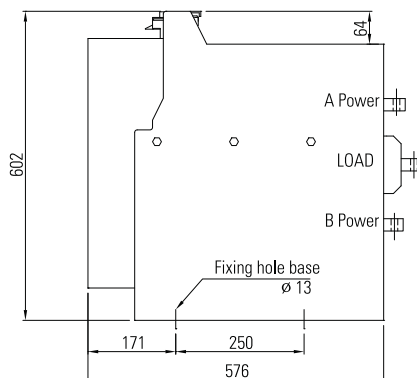
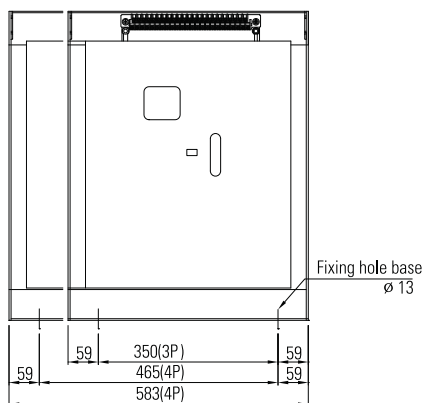


## ATS(800~6300A)

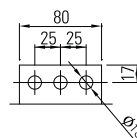
### ◆ Outline Dimension

#### 2000~3200A Draw Out

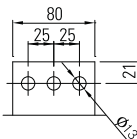
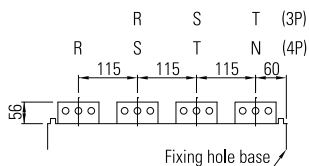
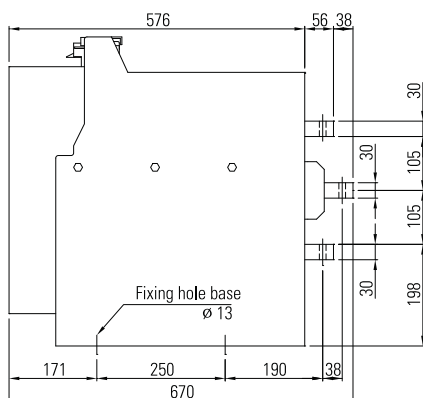
Unit : mm



#### 620~625-PC



| Current | T  |
|---------|----|
| 2000A   | 15 |
| 2500A   | 24 |



#### 632-PC

# PC Type

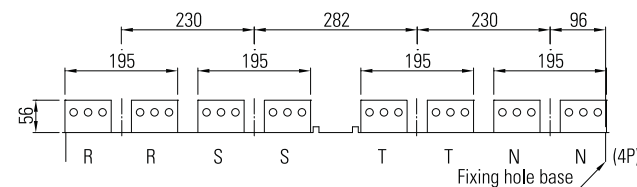
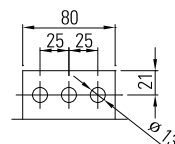
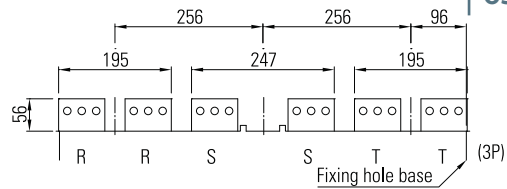
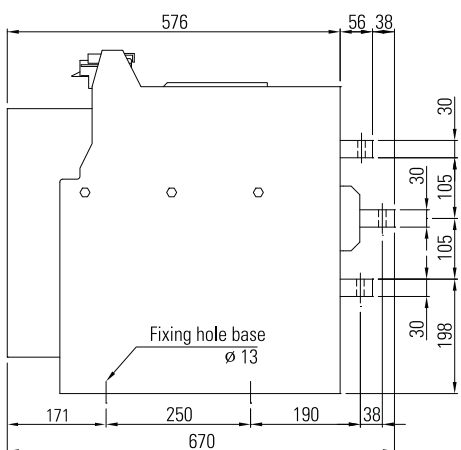
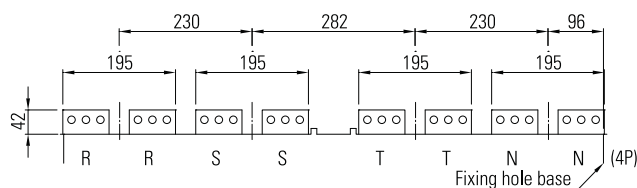
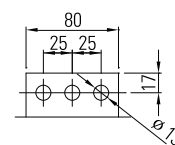
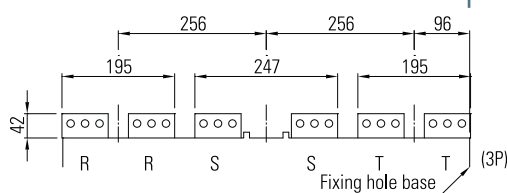
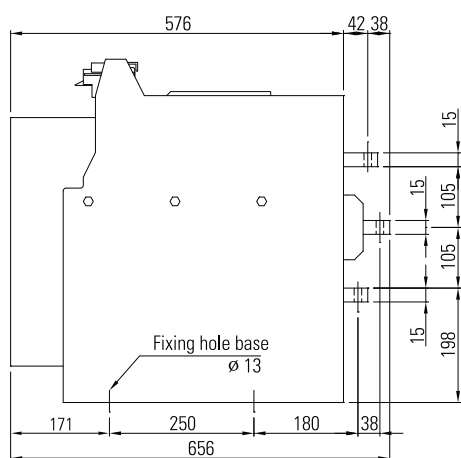
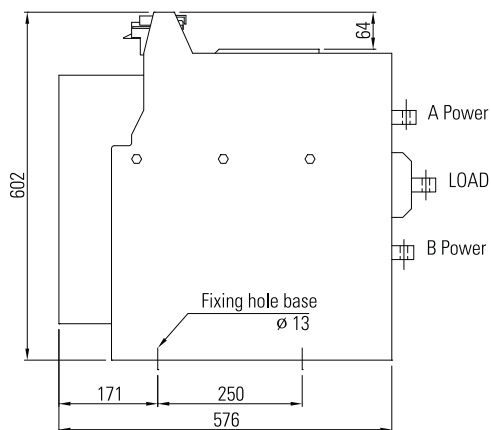
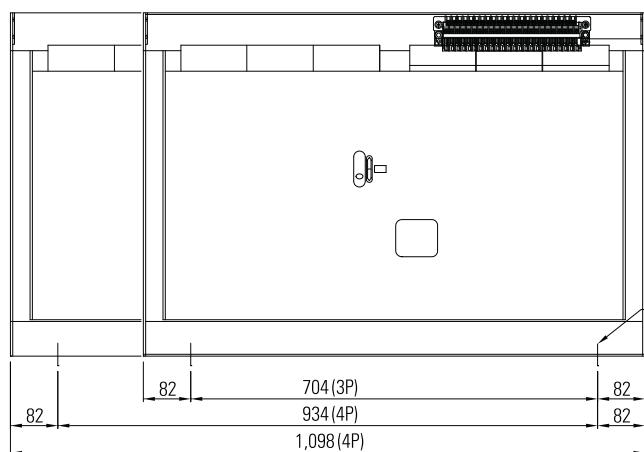
ATS(800~6300A)



## ◆ Outline Dimension

### 4000~6300A Draw Out

Unit : mm



# PSO Type

## ATS(600~6300A)



### Information to Order

6 ☐ - PSO - ☐ P - ☐ - ☐  
A B C D

#### A Rated Current

|      |      |       |       |       |       |       |       |       |       |       |
|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 06   | 08   | 10    | 12    | 16    | 20    | 25    | 32    | 40    | 50    | 63    |
| 600A | 800A | 1000A | 1250A | 1600A | 2000A | 2500A | 3200A | 4000A | 5000A | 6300A |

#### B Number of Poles

- 4 : 4P

#### C Operating Voltage

- A1 : AC 110V
- D1 : DC 110V
- A2 : AC 220V
- D2 : DC 125V

#### D Mounting System

- F : Fixed
- D : Draw out

### Features

In addition to every function of OSS-PC Type ATS, OSS-PSO Type ATS has additional function of Overlapping Neutral Contact. (ON-ON Type ATS)

#### Function of Overlapping Neutral Contact

When general ATS will be transferred, Arc will be generated between fixed contacts and moving contacts. Thus, current flows between contacts and arc will be eliminated when current will be at zero level. Eliminating time of arc is 10~12ms. Therefore, various device of load side can be protected when neutral contacts should be opened 10~12ms later than other 3-phases contacts. Load side devices of general ATS cannot be sufficiently protected because opening time gap between neutral contacts and other 3-phases contacts is less than 10ms. In order to solve this problem, Overlapping between neutral contacts of A-power (Normal) and B-power (Emergency) during transfer of switch functions to protect various devices of load side more safely.

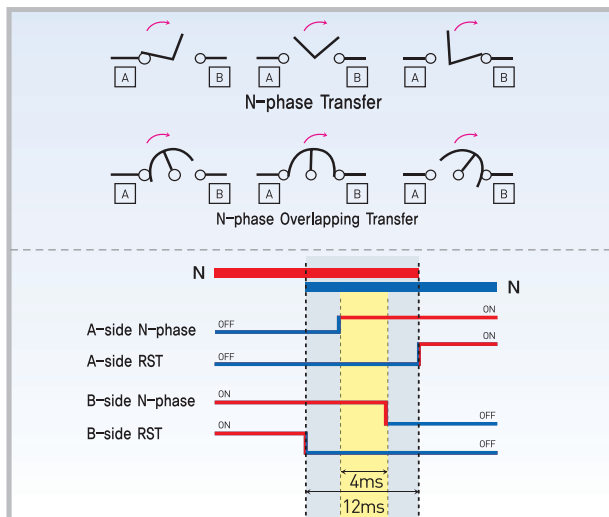
In addition, Non-linear load increases the earth potential and potential difference is occurred between earth and neutral line. When general ATS will be transferred, Neutral line is separated from load and reference potential difference cannot be established. Thus, Floating is occurred and electronic devices can be malfunctioned. When ATS with overlapping neutral contact will be applied, Floating can be protected.

#### Location Needed for Overlapping Neutral Contact

- Broadcasting System and Telecommunication System
- Military Communication System and Radar Facilities
- Bank and Computer Center
- Large Harmonic Load : Elevator & Escalator, etc.)

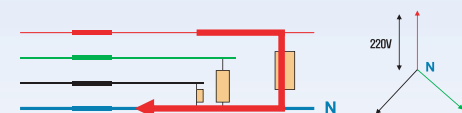
- Arc Furnace
- Petrochemical Plant

#### N-phase Transfer

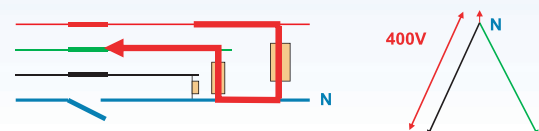


#### Limits of 4P Transfer

- Opening neutral wire is forbidden.
- The neutral is the common reference to 3-phases.



- If N-phase will be opened, Ph/Ph voltage can go up to 400V. For transfer of 4P, Overlapping of N-phase is necessary





# PSO Type

ATS(600~6300A)

## ◆ Specification

| TYPE                                          |                  | 606-PSO                                                                                                                                                                                 | 608-PSO | 610-PSO | 612-PSO        | 616-PSO |
|-----------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------|----------------|---------|
| Rated Operational Voltage Ue                  |                  | AC 600V                                                                                                                                                                                 |         |         |                |         |
| Rated Current Ie                              |                  | 630 A                                                                                                                                                                                   | 800 A   | 1000 A  | 1250 A         | 1600 A  |
| Neutral Phase Current                         |                  | 630 A                                                                                                                                                                                   | 800 A   | 1000 A  | 1250 A         | 1600 A  |
| Kind of Throw                                 |                  | Double Throw                                                                                                                                                                            |         |         |                |         |
| Connection                                    |                  | Back                                                                                                                                                                                    |         |         |                |         |
| Number of Poles                               |                  |                                                                                                                                                                                         |         |         |                |         |
| Weight ( kg)                                  | Fixed            | 70                                                                                                                                                                                      | 75      | 80      | 85             |         |
|                                               | Drawout          | 100                                                                                                                                                                                     | 105     | 115     | 120            |         |
| Rated Short-Time Withstand Current (1sec) Icw |                  | 25 kA                                                                                                                                                                                   |         |         | 40 kA          | 50 kA   |
| Rated Short-Circuit Making Capacity Icm       |                  | 52.5 kA                                                                                                                                                                                 |         |         | 84 kA          | 105 kA  |
| Switching Capacity                            |                  | AC -33B (10 Ie making / 10 Ie breaking cos Ø= 0.35), (1 Ie making / 1 Ie breaking cos Ø= 0.8)                                                                                           |         |         |                |         |
| Switching Frequency                           |                  | 60 Time / Hour                                                                                                                                                                          |         |         | 20 Time / Hour |         |
| Operating Current peak                        | DC 110V ~ 125V   | 45 A                                                                                                                                                                                    |         |         | 50 A           |         |
|                                               | AC 100V ~ 110V   | 45 A                                                                                                                                                                                    |         |         | 50 A           |         |
|                                               | AC 200V ~ 240V   | 30 A                                                                                                                                                                                    |         |         | 40 A           |         |
| Operating Time                                | Change-over Time | ≤ 100 ms                                                                                                                                                                                |         |         |                |         |
|                                               | Opening Time     | ≤ 60 ms                                                                                                                                                                                 |         |         |                |         |
| Number of Operating Cycles                    | Without Current  | 10,000                                                                                                                                                                                  |         |         |                |         |
|                                               | With Current     | 5,000                                                                                                                                                                                   |         |         |                |         |
| Cautions                                      |                  | 1. For complete operation, Be sure to provide control source for more than 0.5sec.<br>2. When control source will be provided to A side and B side simultaneously, Coil may be damaged. |         |         |                |         |

| TYPE                                          |                  | 620-PSO                                                                                                                                                                                 | 625-PSO      | 632-PSO | 640-PSO | 650-PSO | 663-PSO |
|-----------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------|---------|---------|---------|
| Rated Operational Voltage Ue                  |                  | AC 600 V                                                                                                                                                                                |              |         |         |         |         |
| Rated Current Ie                              |                  | 2000 A                                                                                                                                                                                  | 2500 A       | 3200 A  | 4000 A  | 5000 A  | 6300 A  |
| Neutral Phase Current                         |                  | 2000 A                                                                                                                                                                                  | 2500 A       | 3200 A  | 4000 A  | 5000 A  | 6300 A  |
| Kind of Throw                                 |                  |                                                                                                                                                                                         | Double Throw |         |         |         |         |
| Connection                                    |                  |                                                                                                                                                                                         | Back         |         |         |         |         |
| Number of Poles                               |                  | 4P                                                                                                                                                                                      |              |         |         |         |         |
| Weight ( kg)                                  | Fixed            | 115                                                                                                                                                                                     | 125          | 125     | 210     | 230     | 250     |
|                                               | Drawout          | 140                                                                                                                                                                                     | 140          | 155     | 275     | 285     | 305     |
| Rated Short-Time Withstand Current (1sec) Icw |                  | 50 kA                                                                                                                                                                                   | 50 kA        |         | 65 kA   |         |         |
| Rated Short-Circuit Making Capacity Icm       |                  | 105 kA                                                                                                                                                                                  | 105 kA       |         | 143 kA  |         |         |
| Switching Capacity                            |                  | AC -33B (10 Ie making / 10 Ie breaking cos Ø= 0.35), (1 Ie making / 1 Ie breaking cos Ø= 0.8)                                                                                           |              |         |         |         |         |
| Switching Frequency                           |                  | 10 Time / Hour                                                                                                                                                                          |              |         |         |         |         |
| Operating Current peak                        | DC 110V ~ 125V   | 65 A                                                                                                                                                                                    |              |         |         | 80 A    |         |
|                                               | AC 100V ~ 110V   | 65 A                                                                                                                                                                                    |              |         |         | 80 A    |         |
|                                               | AC 200V ~ 240V   | 50 A                                                                                                                                                                                    |              |         |         | 65 A    |         |
| Operating Time                                | Change-over Time | ≤ 100 ms                                                                                                                                                                                |              |         |         |         |         |
|                                               | Opening Time     | ≤ 60 ms                                                                                                                                                                                 |              |         |         |         |         |
| Number of Operating Cycles                    | Without Current  | 5,000                                                                                                                                                                                   |              |         | 3,000   |         |         |
|                                               | With Current     | 3,000                                                                                                                                                                                   |              |         | 1,500   |         |         |
| Cautions                                      |                  | 1. For complete operation, Be sure to provide control source for more than 0.5sec.<br>2. When control source will be provided to A side and B side simultaneously, Coil may be damaged. |              |         |         |         |         |



# PSO Type

Automatic Transfer Switches 28 | 29

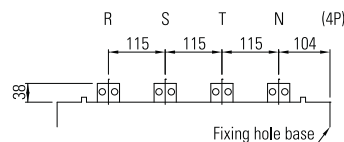
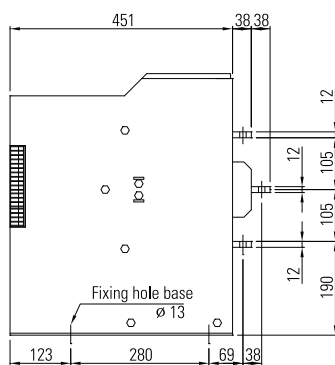
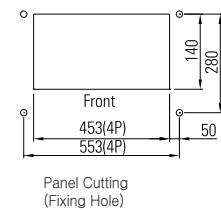
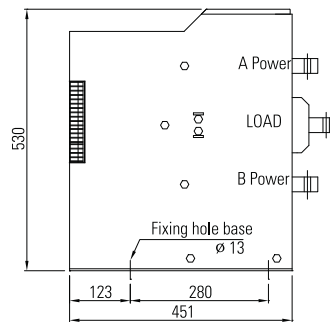
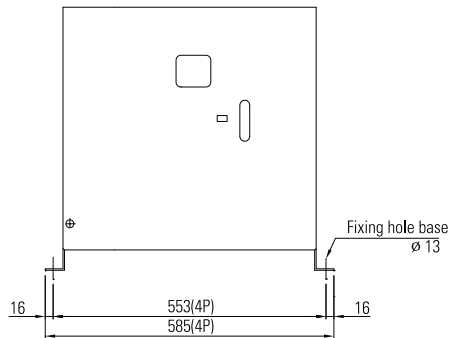
ATS(600~6300A)



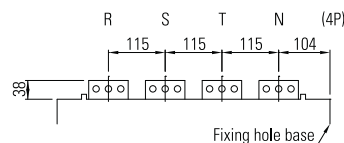
## ◆ Outline Dimension

### 600~3200A Fixed

Unit : mm

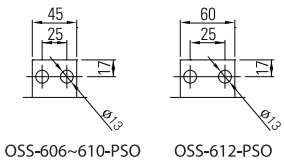


606~612-PSO



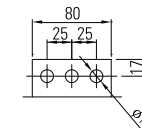
616-PSO

### 606~616-PSO

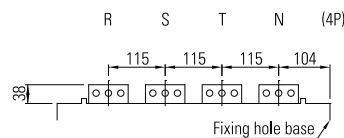
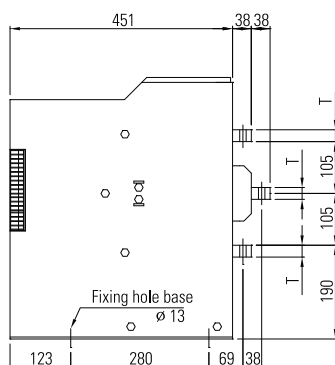


OSS-606~610-PSO

OSS-612-PSO

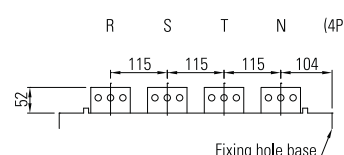
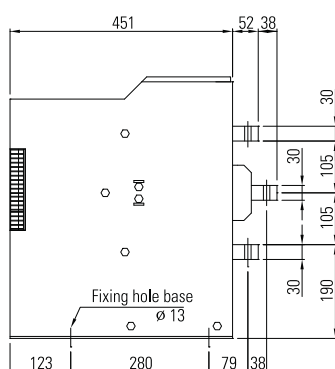
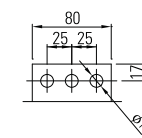


OSS-616-PSO

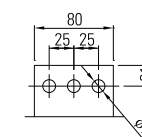


### 620~625-PSO

| Current | T  |
|---------|----|
| 2000A   | 15 |
| 2500A   | 24 |



### 632-PSO





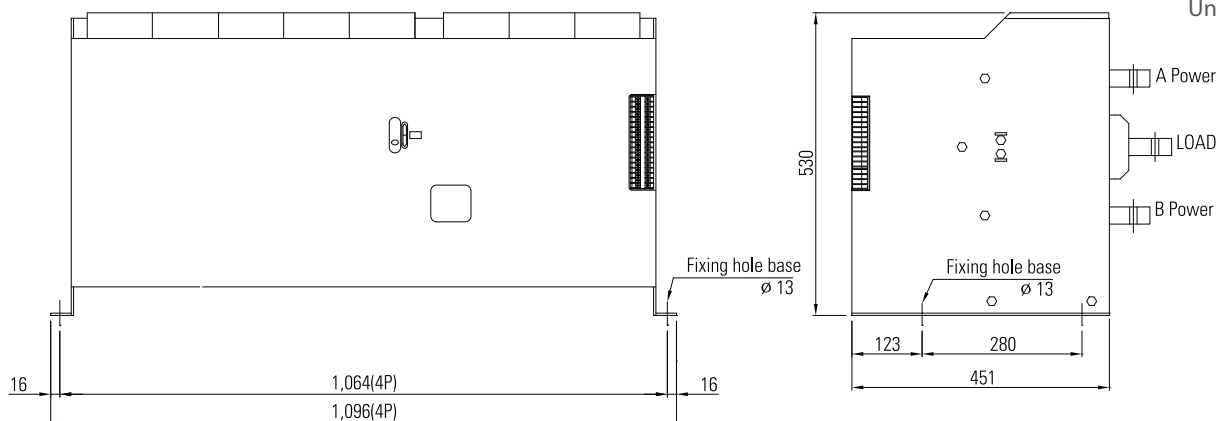
# PSO Type

ATS(600~6300A)

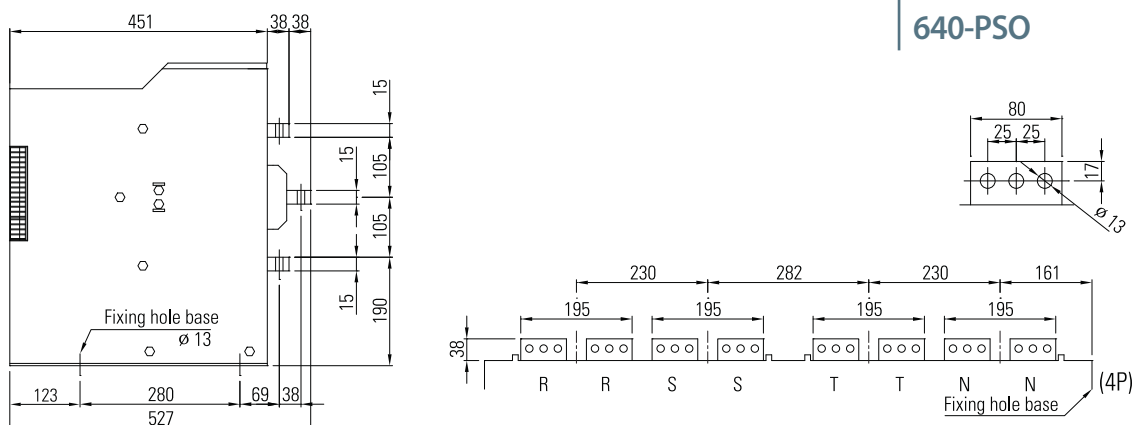
## ◆ Outline Dimension

### 4000~6300A Fixed

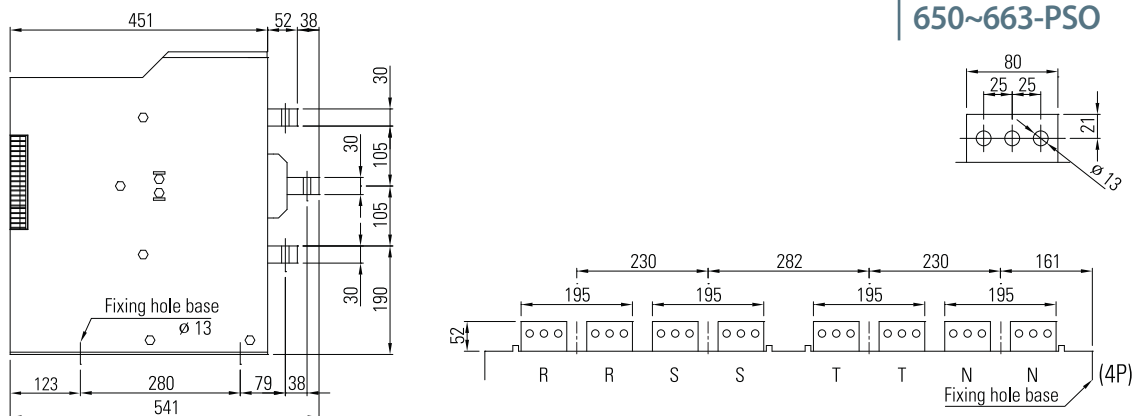
Unit : mm



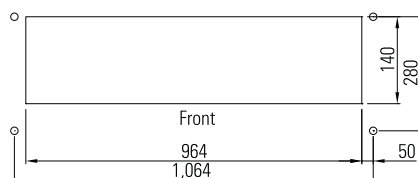
### 640-PSO



### 650~663-PSO



## Panel cutting (Fixing hole)

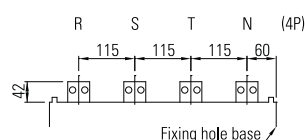
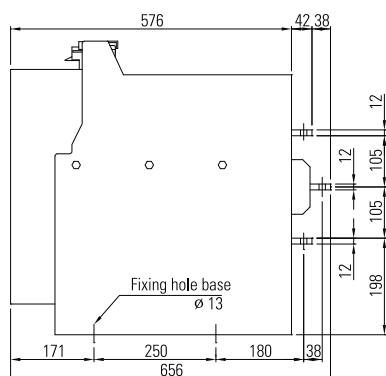
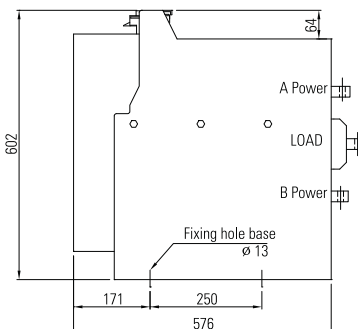
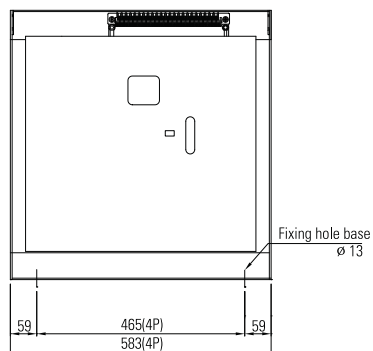




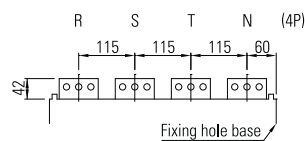
### ◆ Outline Dimension

### 600~3200A Draw Out

Unit : mm

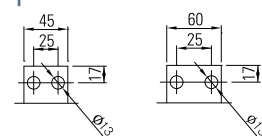


606~612-PSO



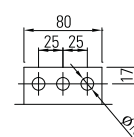
616-PSO

### 606~616-PSO

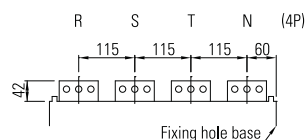
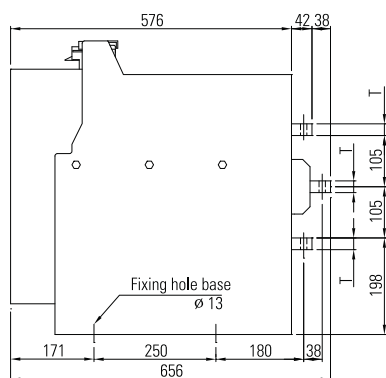


OSS-606~610-PSO

OSS-612-PSO

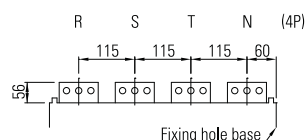
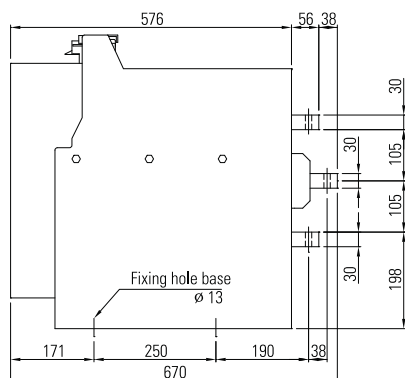
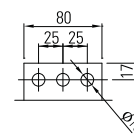


OSS-616-PSO

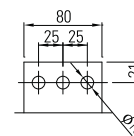


### 620~625-PSO

| Current | T  |
|---------|----|
| 2000A   | 15 |
| 2500A   | 24 |



### 632-PSO





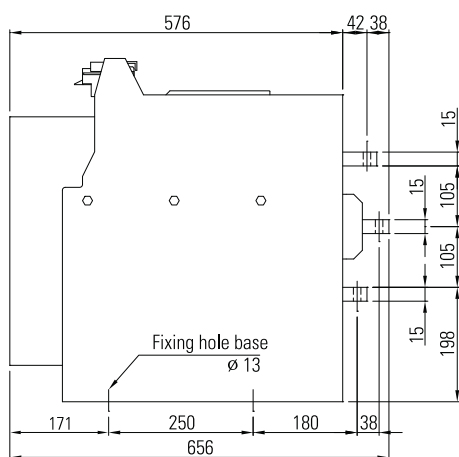
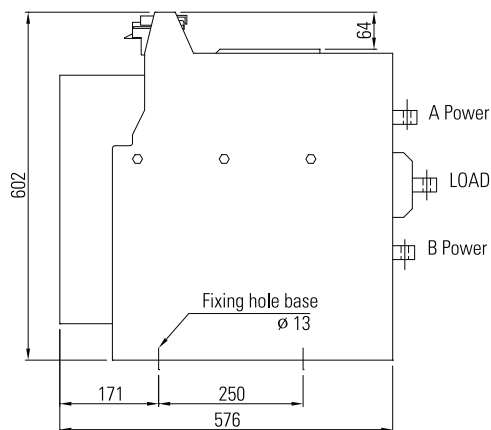
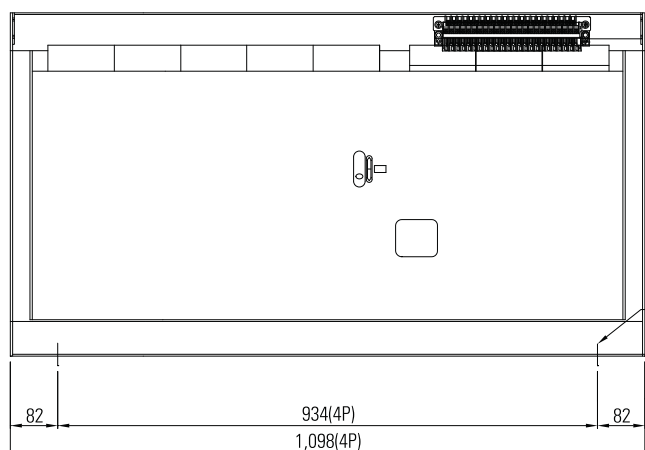
# PSO Type

ATS(600~6300A)

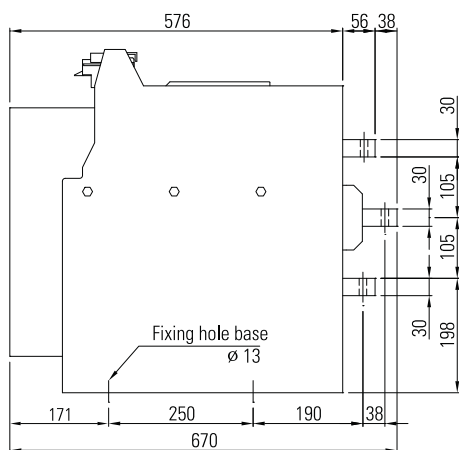
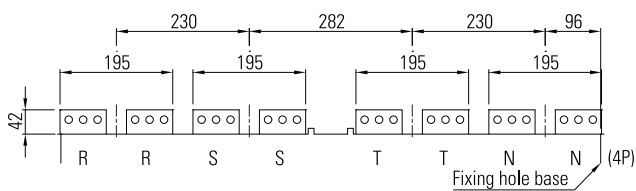
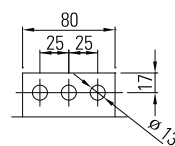
## ◆ Outline Dimension

### 4000~6300A Draw Out

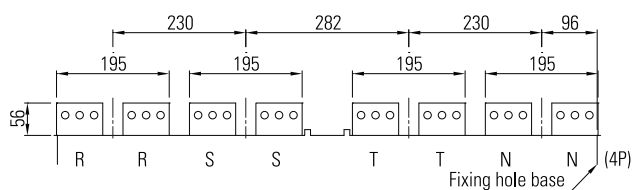
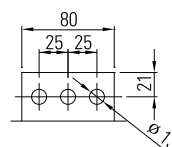
Unit : mm



### 640-PSO



### 650~663-PSO

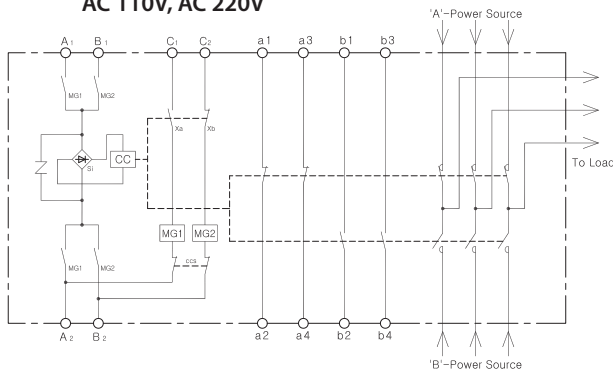




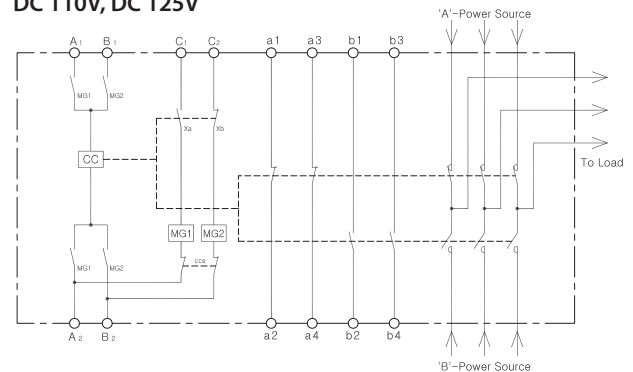
## ATS

### Circuit Diagram

AC 110V, AC 220V



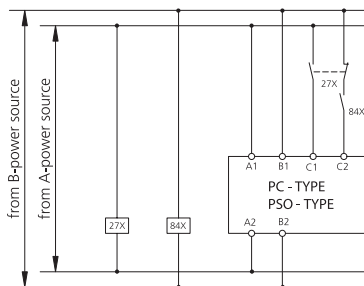
DC 110V, DC 125V



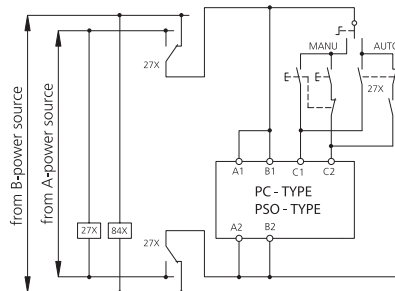
|        |                           |                |                    |
|--------|---------------------------|----------------|--------------------|
| A1, A2 | A-Power Closing Terminal  | Xa, Xb         | Control Switch     |
| B1, B2 | B-Power Closing Terminal  | MG1, MG2       | Magnetic coil      |
| CC     | Closing coil              | a1, a2, a3, a4 | A-Power Aux Switch |
| C      | Closing coil state switch | b1, b2, b3, b4 | B-Power Aux Switch |

### Typical Operating Circuit

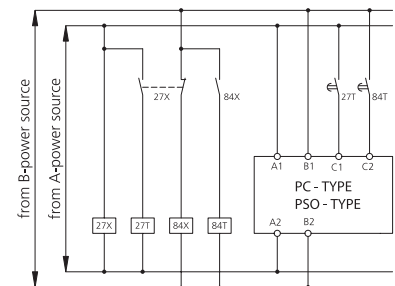
Standard



In Case of using a changeover switch

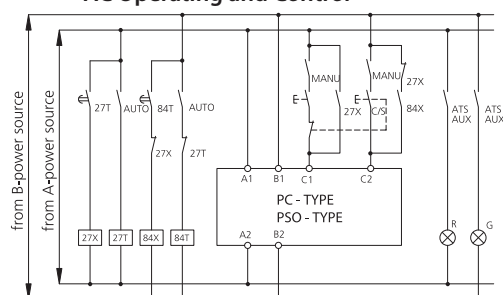


In Case of using a timer

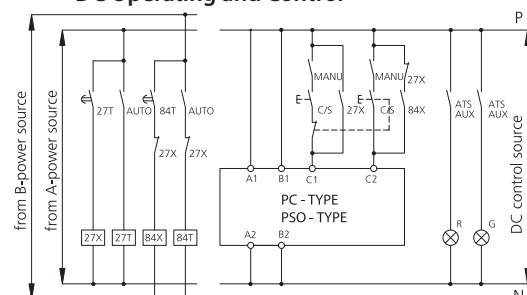


### Wiring Diagram

AC Operating and Control



DC Operating and Control



|            |                           |     |                           |
|------------|---------------------------|-----|---------------------------|
| 27X        | Source-A Operating Relay  | 84X | Source-B Operating Relay  |
| 27T        | 27X Operating Delay Relay | 84T | 84X Operating Delay Relay |
| AUTO, MANU | Automatic, Manual         | C/S | Control Switch            |

**Caution)** More than 2.5mm<sup>2</sup> power cable used for 1600A ATS or less.  
More than 4.0mm<sup>2</sup> power cable used for 2000A ATS or over.  
More than 6.0mm<sup>2</sup> power cable used for 4000A ATS or over.



# PCN Type

ATS(800~6300A)

## Information to Order

6  -  -  P -  -   
A B C D E

### A Rated Current

|      |       |       |       |       |       |       |       |       |       |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 08   | 10    | 12    | 16    | 20    | 25    | 32    | 40    | 50    | 63    |
| 800A | 1000A | 1250A | 1600A | 2000A | 2500A | 3200A | 4000A | 5000A | 6300A |

### B Type

- PCN : PCN-Type

### C Number of Poles

- 3 : 3P
- 4 : 4P

### D Operating Voltage

- A1 : AC 110V
- A2 : AC 220V
- D1 : DC 110V
- D2 : DC 125V

### E Mounting System

- F : Fixed
- D : Draw out

## External View



|   |                                        |
|---|----------------------------------------|
| ① | Selective Button for "B"-Power Closing |
| ② | Trip Button                            |
| ③ | Manual Lever                           |
| ④ | Circuit Diagram                        |
| ⑤ | Name Plate                             |
| ⑥ | Manual Lever Inlet                     |
| ⑦ | "A"-Power ON/OFF Indicator             |
| ⑧ | "B"-Power ON/OFF Indicator             |
| ⑨ | Terminal Block                         |

## Features

- Neutral position is functioned to cut off both power sources  
In case UPS is applied, It is available to transfer to neutral position by tripping mechanism after checking circuit stability and safety instantaneous transfer as follows. A ⇒ Off ⇒ B, B ⇒ Off ⇒ A and A ⇒ Off ⇒ A, B ⇒ Off ⇒ B instantaneous transfer can be available also by operating signal.
- Sufficient contact capacity against accidental current.  
(20 times of operating current)
- On-load break and make type.
- Easy busbar arrangement.
- Prevent the simultaneous closing by complete mechanical and electrical tripping mechanism
- Current carrying capacity of of N-phase is 100% same as other phases.
- N-phase is closed earlier and opened later.



| TYPE                                      |  |                 | 625-PCN     |                                                                                                                                                                                         | 632-PCN                                                                                       |     | 640-PCN |       | 650-PCN |     | 663-PCN |     |        |     |
|-------------------------------------------|--|-----------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----|---------|-------|---------|-----|---------|-----|--------|-----|
| Rated Operational Voltage                 |  |                 | Ue          |                                                                                                                                                                                         | AC 600 V                                                                                      |     |         |       |         |     |         |     |        |     |
| Rated Insulation Voltage                  |  |                 | Ui          |                                                                                                                                                                                         | AC 800 V                                                                                      |     |         |       |         |     |         |     |        |     |
| Rated Impulse Withstand Voltage           |  |                 | Uimp        |                                                                                                                                                                                         | AC 8000 V                                                                                     |     |         |       |         |     |         |     |        |     |
| Rated Current                             |  |                 | Ie          |                                                                                                                                                                                         | 2500 A                                                                                        |     | 3200 A  |       | 4000 A  |     | 5000 A  |     | 6300 A |     |
| Neutral Phase Current                     |  |                 |             |                                                                                                                                                                                         | 2500 A                                                                                        |     | 3200 A  |       | 4000 A  |     | 5000 A  |     | 6300 A |     |
| Kind of Throw                             |  |                 |             |                                                                                                                                                                                         | Double Throw                                                                                  |     |         |       |         |     |         |     |        |     |
| Connection                                |  |                 |             |                                                                                                                                                                                         | Back                                                                                          |     |         |       |         |     |         |     |        |     |
| Number of Poles                           |  |                 |             |                                                                                                                                                                                         | 3P                                                                                            | 4P  | 3P      | 4P    | 3P      | 4P  | 3P      | 4P  | 3P     | 4P  |
| Weight (      kg)                         |  | Fixed           |             |                                                                                                                                                                                         | 105                                                                                           | 125 | 110     | 130   | 180     | 220 | 200     | 250 | 200    | 250 |
|                                           |  | Drawout         |             |                                                                                                                                                                                         | 165                                                                                           | 195 | 180     | 210   | 220     | 275 | 245     | 400 | 300    | 400 |
| Rated Short-Time Withstand Current (1sec) |  |                 | Icw         |                                                                                                                                                                                         | 50 kA                                                                                         |     | 50 kA   |       | 65 kA   |     | 65 kA   |     | 65 kA  |     |
| Rated Short-Circuit Making Capacity       |  |                 | peak    Icm |                                                                                                                                                                                         | 105 kA                                                                                        |     | 105 kA  |       | 143 kA  |     | 143 kA  |     | 143 kA |     |
| Switching Capacity                        |  |                 |             |                                                                                                                                                                                         | AC -33B (10 Ie making / 10 Ie breaking cos Ø= 0.35), (1 Ie making / 1 Ie breaking cos Ø= 0.8) |     |         |       |         |     |         |     |        |     |
| Switching Frequency                       |  |                 |             |                                                                                                                                                                                         | 10 Time / Hour                                                                                |     |         |       |         |     |         |     |        |     |
| Operating Current peak                    |  | DC 110V ~ 125V  |             | 65 A                                                                                                                                                                                    |                                                                                               |     |         | 80 A  |         |     |         |     |        |     |
|                                           |  | AC 100V ~ 110V  |             | 65 A                                                                                                                                                                                    |                                                                                               |     |         | 80 A  |         |     |         |     |        |     |
|                                           |  | AC 200V ~ 240V  |             | 50 A                                                                                                                                                                                    |                                                                                               |     |         | 65 A  |         |     |         |     |        |     |
| Operating Time                            |  | “A” Power       | Making      | ≤ 100 ms                                                                                                                                                                                |                                                                                               |     |         |       |         |     |         |     |        |     |
|                                           |  |                 | Breaking    | ≤ 60 ms                                                                                                                                                                                 |                                                                                               |     |         |       |         |     |         |     |        |     |
|                                           |  | “B” Ppower      | Making      | ≤ 100 ms                                                                                                                                                                                |                                                                                               |     |         |       |         |     |         |     |        |     |
|                                           |  |                 | Breaking    | ≤ 60 ms                                                                                                                                                                                 |                                                                                               |     |         |       |         |     |         |     |        |     |
| Number of Operating Cycles                |  | Without Current |             | 5,000                                                                                                                                                                                   |                                                                                               |     |         | 3,000 |         |     |         |     |        |     |
|                                           |  | With Current    |             | 3,000                                                                                                                                                                                   |                                                                                               |     |         | 1,500 |         |     |         |     |        |     |
| Cautions                                  |  |                 |             | 1. For complete operation, Be sure to provide control source for more than 0.5sec.<br>2. When control source will be provided to A side and B side simultaneously, Coil may be damaged. |                                                                                               |     |         |       |         |     |         |     |        |     |



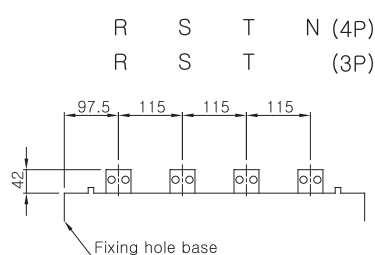
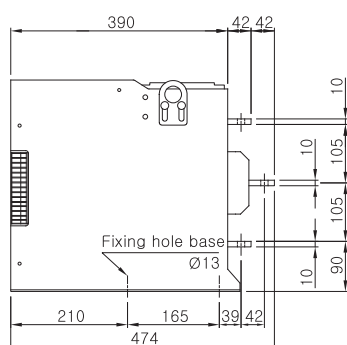
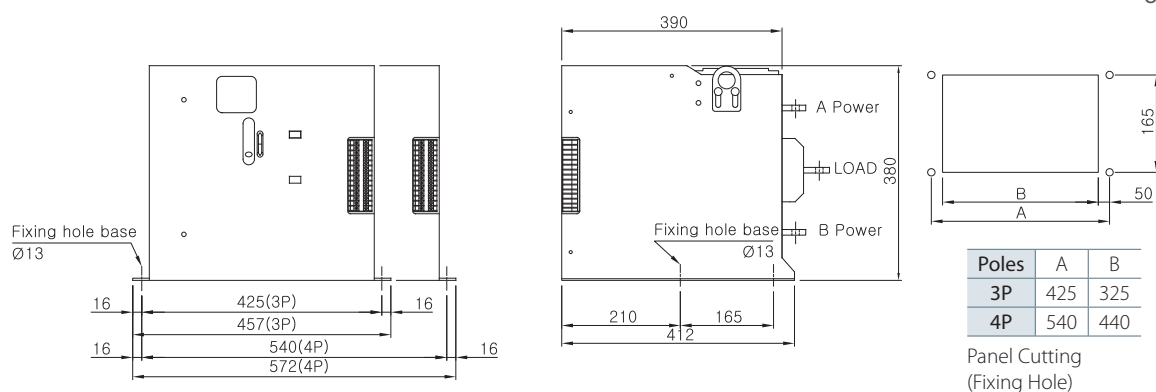
# PCN Type

ATS(800~6300A)

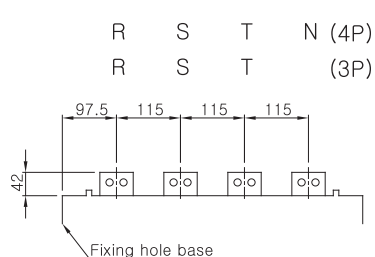
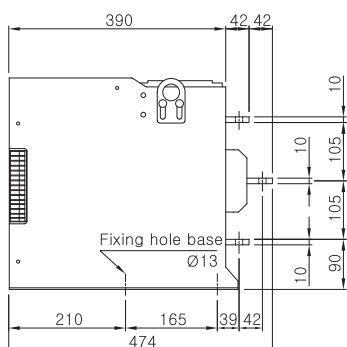
## ◆ Outline Dimension

### 800~1600A Fixed

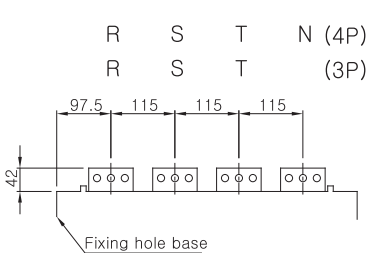
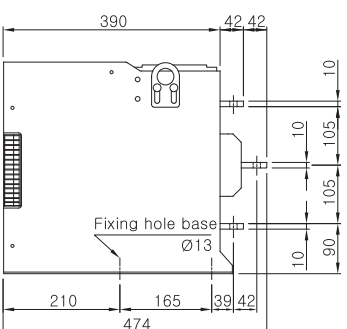
Unit : mm



### 608~610-PCN



### 612-PCN



### 616-PCN



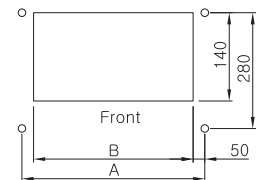
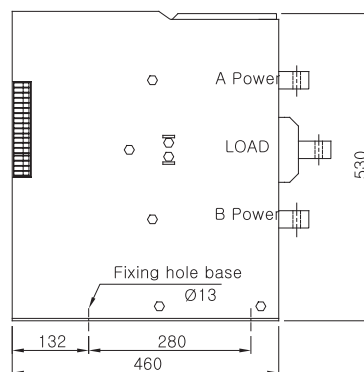
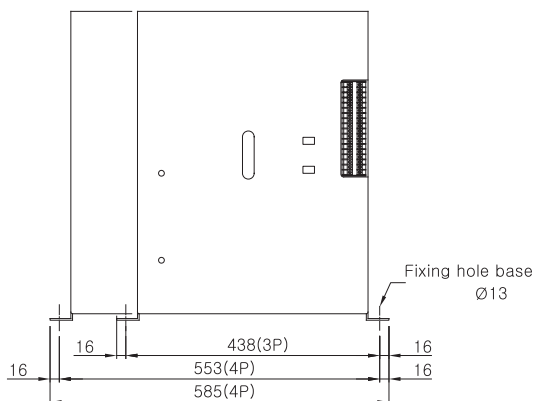


## ATS(800~6300A)

### ◆ Outline Dimension

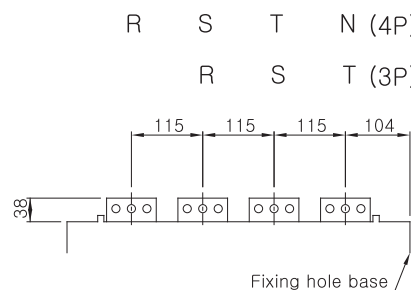
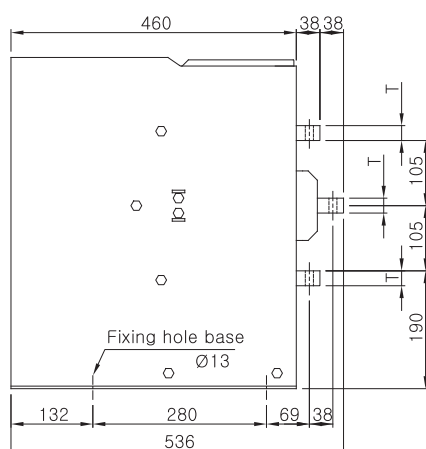
#### 2000~3200A Fixed

Unit : mm

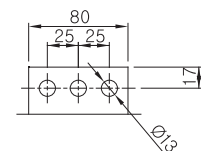


| Poles | A   | B   |
|-------|-----|-----|
| 3P    | 438 | 338 |
| 4P    | 553 | 453 |

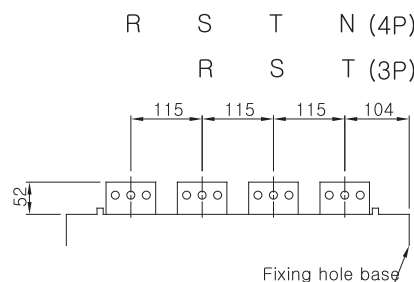
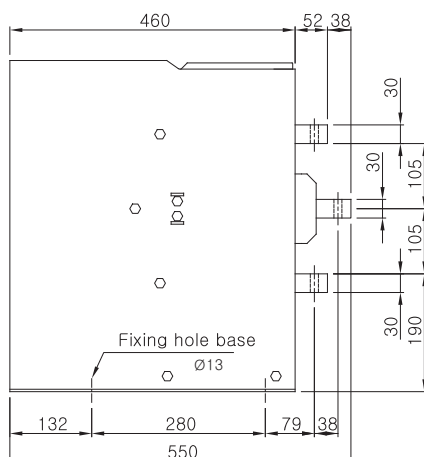
Panel Cutting  
(Fixing Hole)



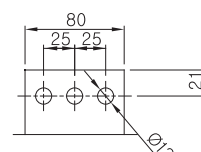
#### 620~625-PCN



| Current | T  |
|---------|----|
| 2000A   | 15 |
| 2500A   | 24 |



#### 632-PCN





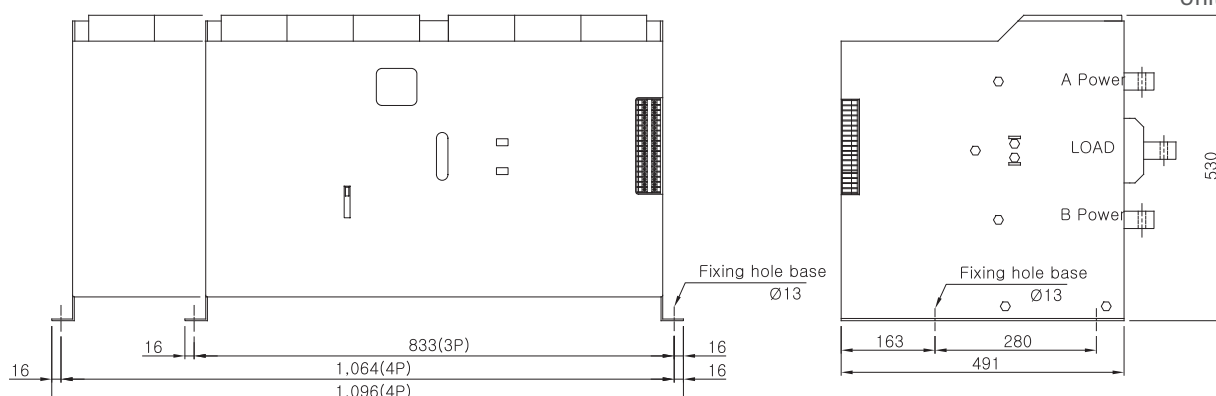
# PCN Type

ATS(800~6300A)

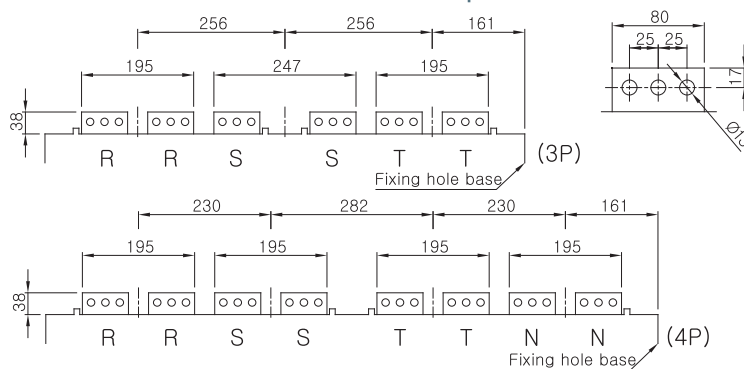
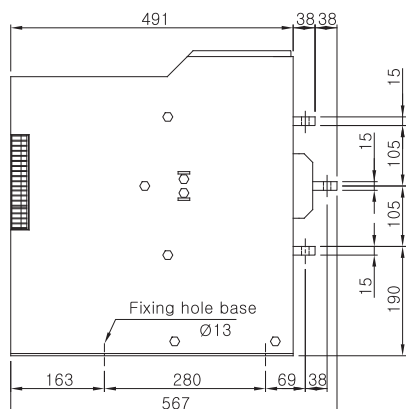
## ◆ Outline Dimension

### 4000~6300A Fixed

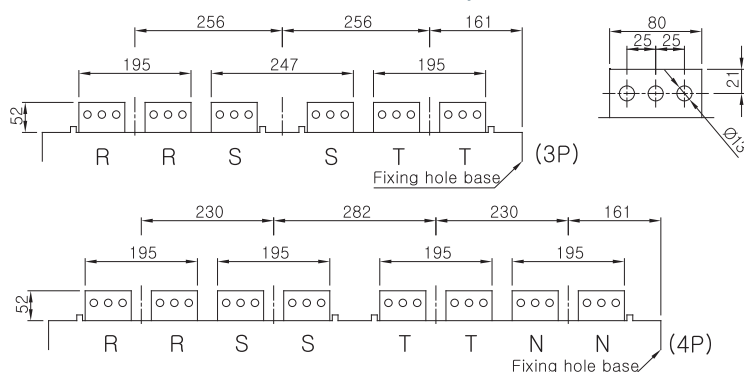
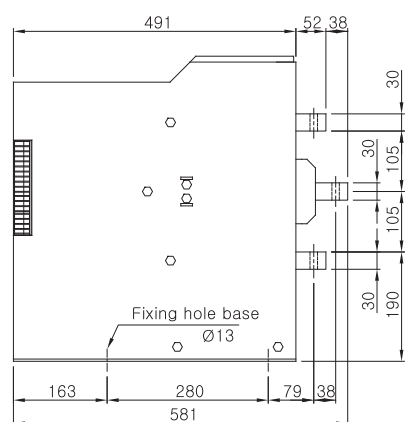
Unit : mm



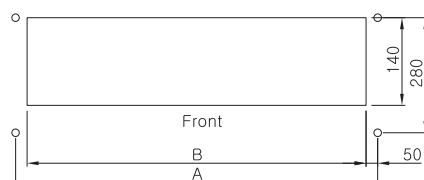
### 640-PCN



### 650~663-PCN



## Panel cutting (Fixing hole)



| Poles | A    | B   |
|-------|------|-----|
| 3P    | 834  | 734 |
| 4P    | 1064 | 964 |

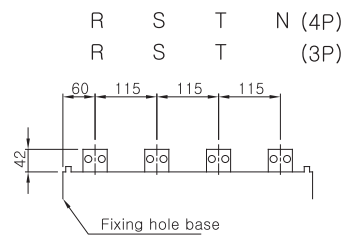
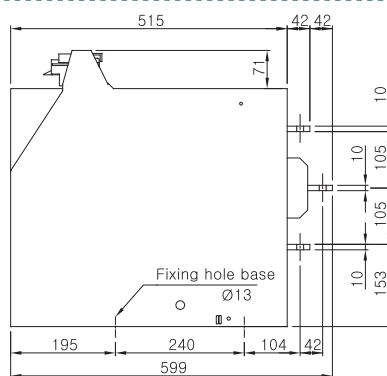
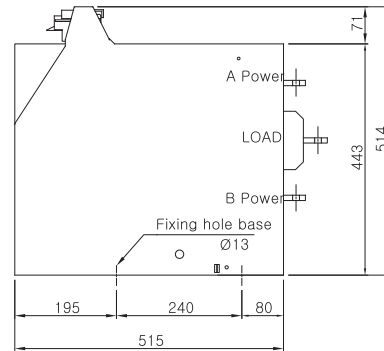
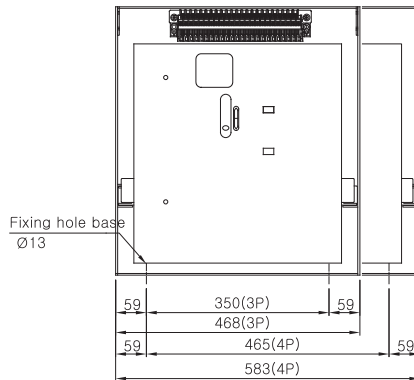


## ATS(800~6300A)

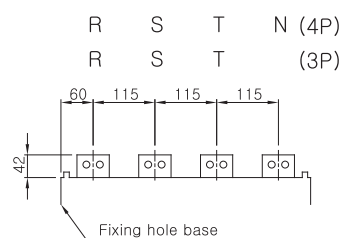
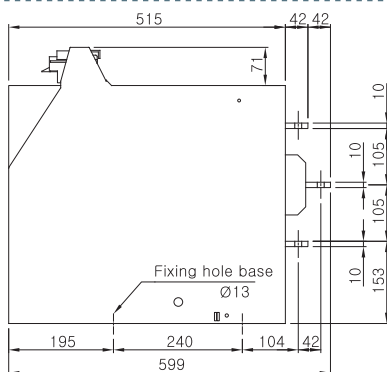
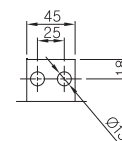
### ◆ Outline Dimension

### 800~1600A Draw Out

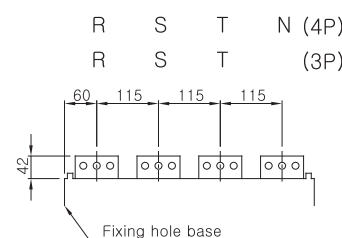
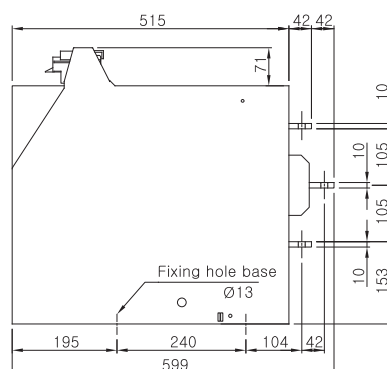
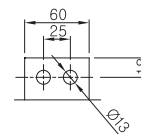
Unit : mm



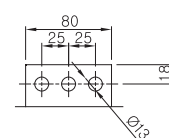
### 608~610-PCN



### 612-PCN



### 616-PCN





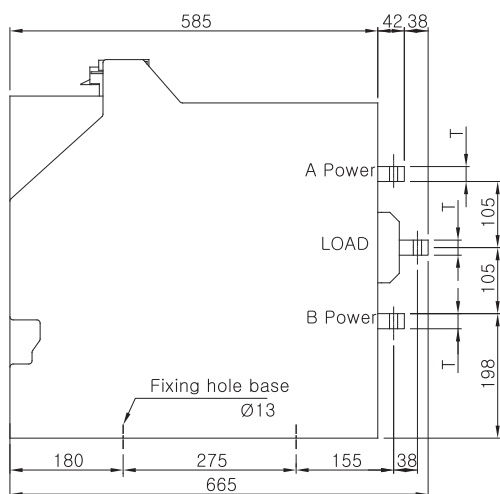
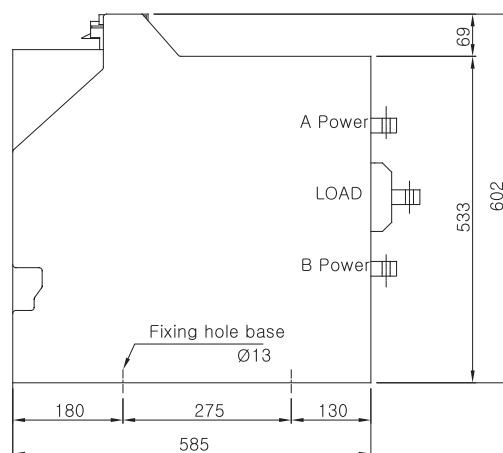
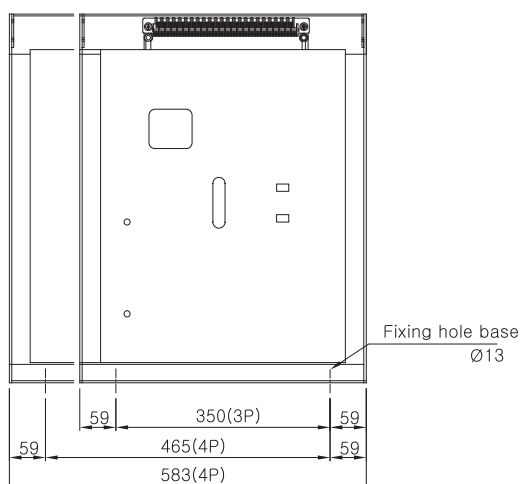
# PCN Type

ATS(800~6300A)

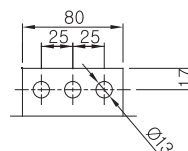
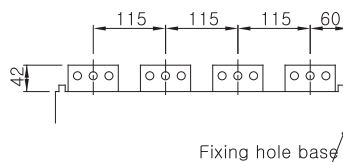
## ◆ Outline Dimension

### 2000~3200A Draw Out

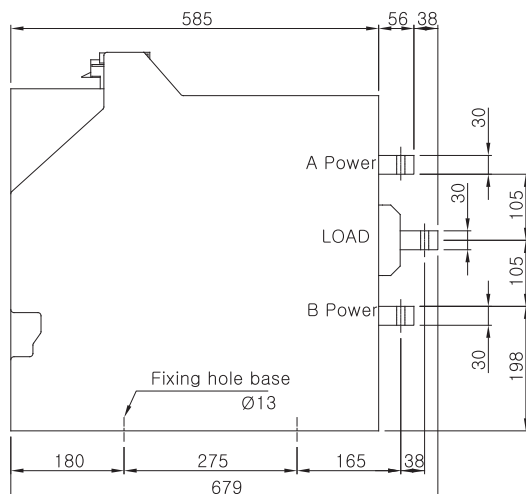
Unit : mm



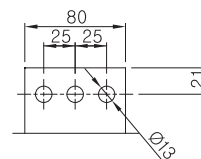
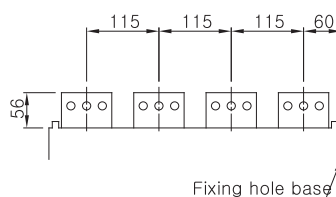
R S T N (4P)  
R S T (3P)



| Current | T  |
|---------|----|
| 2000A   | 15 |
| 2500A   | 24 |



R S T N (4P)  
R S T (3P)



### 632-PCN

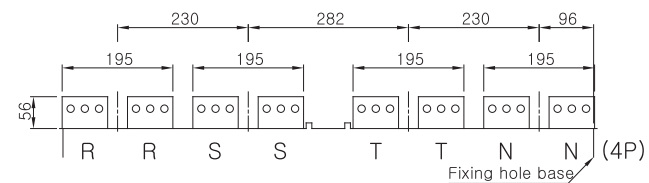
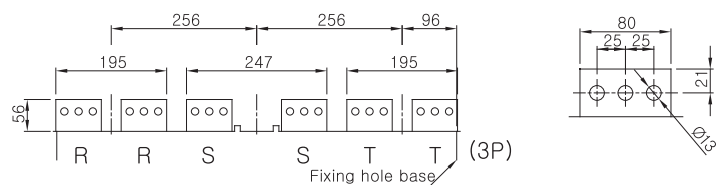
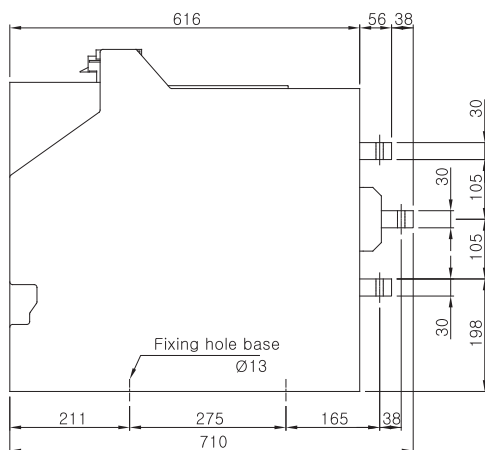
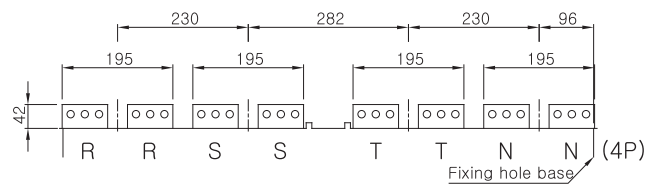
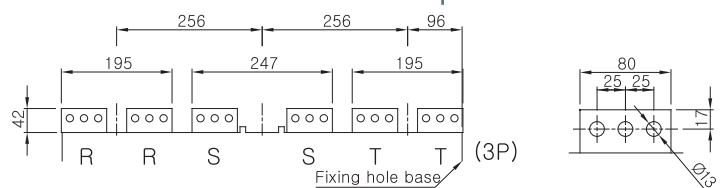
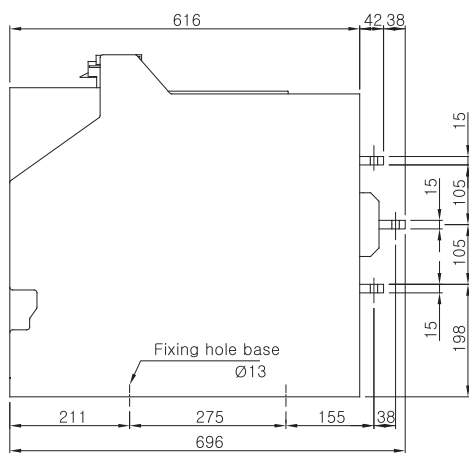
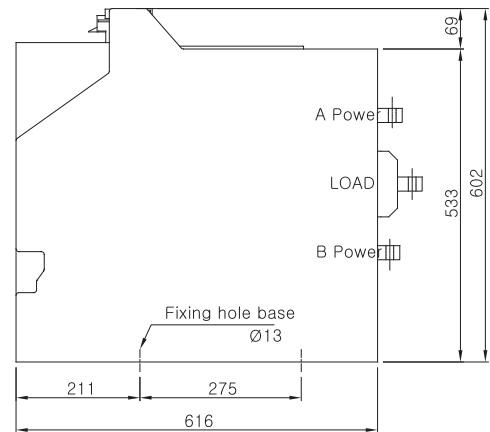
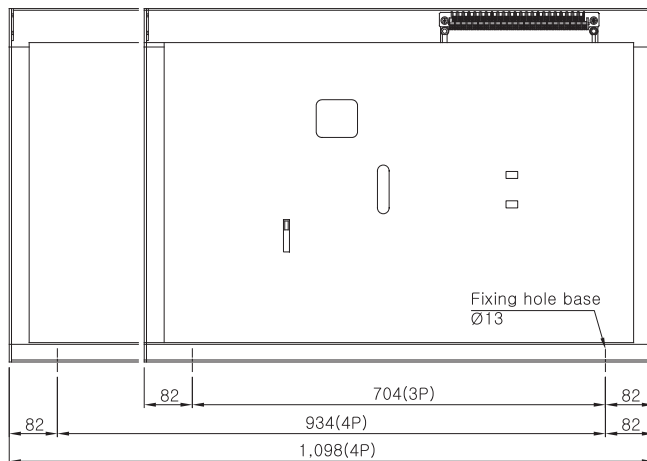


## ATS(800~6300A)

### ◆ Outline Dimension

### 4000~6300A Draw Out

Unit : mm



# PCN Type

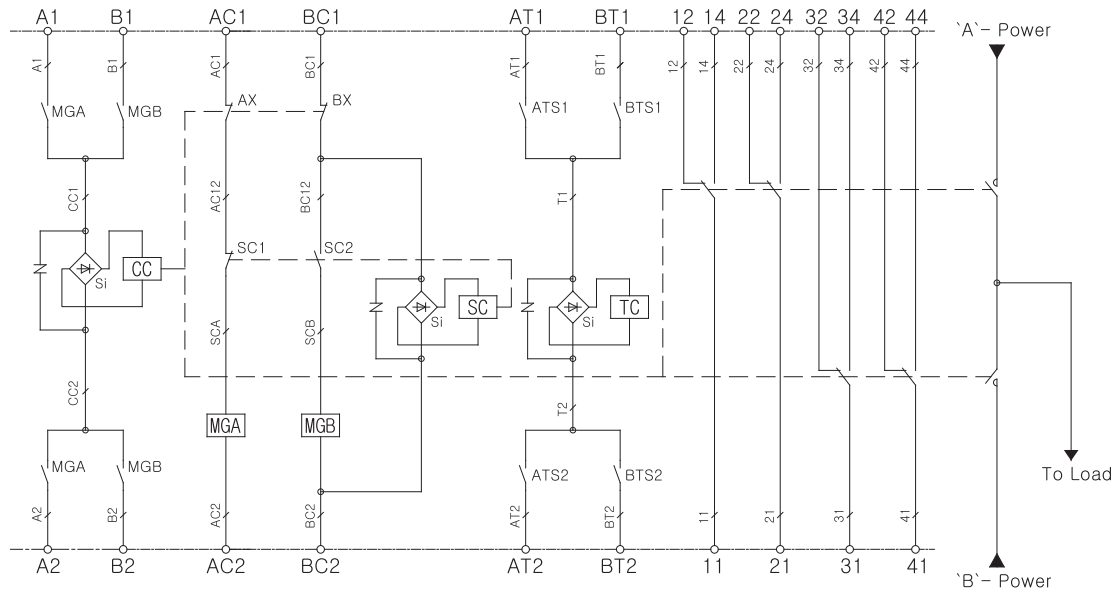
ATS(800~6300A)



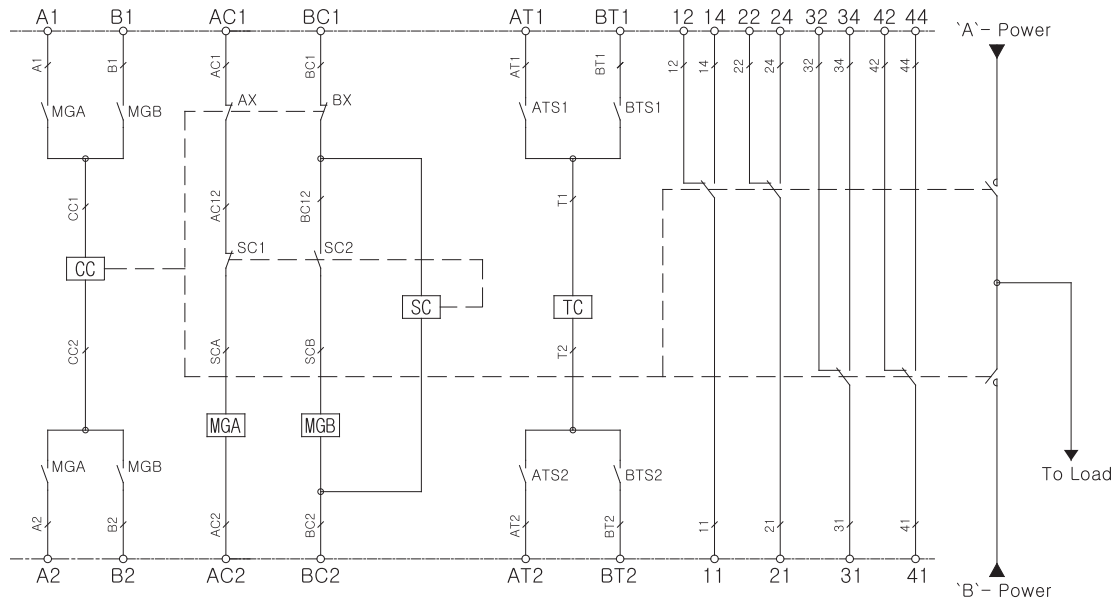
## Circuit Diagram

## 800A~1600A Fixed

### AC 110V, AC 220V



### DC 110V, DC 125V



|          |                           |            |                                 |
|----------|---------------------------|------------|---------------------------------|
| A1, A2   | A-Power Terminal          | MGA        | A-Power Closing Magnetic Coil   |
| B1, B2   | B-Power Terminal          | MGB        | B-Power Closing Magnetic Coil   |
| AC1, AC2 | A-Power Closing Terminal  | AX, BX     | Controller Switch               |
| BC1, BC2 | B-Power Closing Terminal  | 11 ~ 24    | A-Power AUX Switch              |
| AT1, AT2 | A-Power Tripping Terminal | 31 ~ 44    | B-Power AUX Switch              |
| BT1, BT2 | B-Power Tripping Terminal | ATS1, ATS2 | A-Power Tripping Control Switch |
| CC       | Closing Coil              | BTS1, BTS2 | B-Power Tripping Control Switch |
| SC       | B-Power Selective Coil    | SC1, SC2   | Selective Switch                |
| TC       | Tripping Coil             | Si         | Silicon Rectifier               |

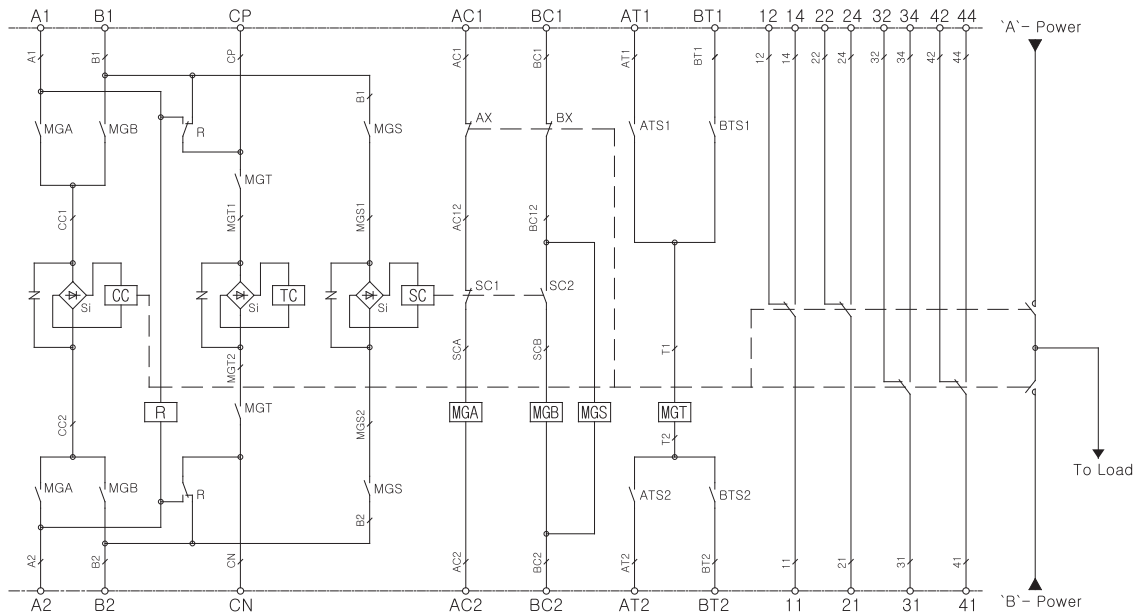


## ATS(800~6300A)

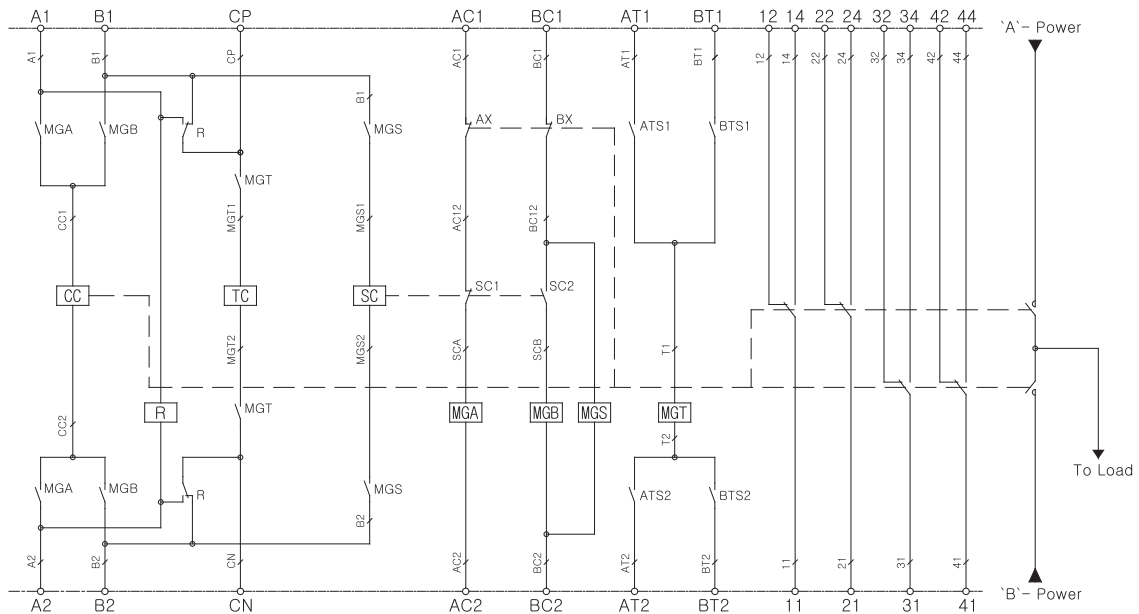
### Circuit Diagram

### 2000A~6300A Fixed

#### AC 110V, AC 220V



#### DC 110V, DC 125V



|          |                               |            |                                 |
|----------|-------------------------------|------------|---------------------------------|
| A1, A2   | A-Power Terminal              | MGB        | B-Power Closing Magnetic Coil   |
| B1, B2   | B-Power Terminal              | MGS        | Selective Magnetic Coil         |
| AC1, AC2 | A-Power Closing Terminal      | MGT        | Tripping Magnetic Coil          |
| BC1, BC2 | B-Power Closing Terminal      | AX, BX     | Controller Switch               |
| AT1, AT2 | A-Power Tripping Terminal     | 11 ~ 24    | A-Power AUX Switch              |
| BT1, BT2 | B-Power Tripping Terminal     | 31 ~ 44    | B-Power AUX Switch              |
| CC       | Closing Coil                  | ATS1, ATS2 | A-Power Tripping Control Switch |
| SC       | B-Power Selective Coil        | BTS1, BTS2 | B-Power Tripping Control Switch |
| TC       | Tripping Coil                 | SC1, SC2   | Selective Switch                |
| MGA      | A-Power Closing Magnetic Coil | Si         | Silicon Rectifier               |

# PCN Type

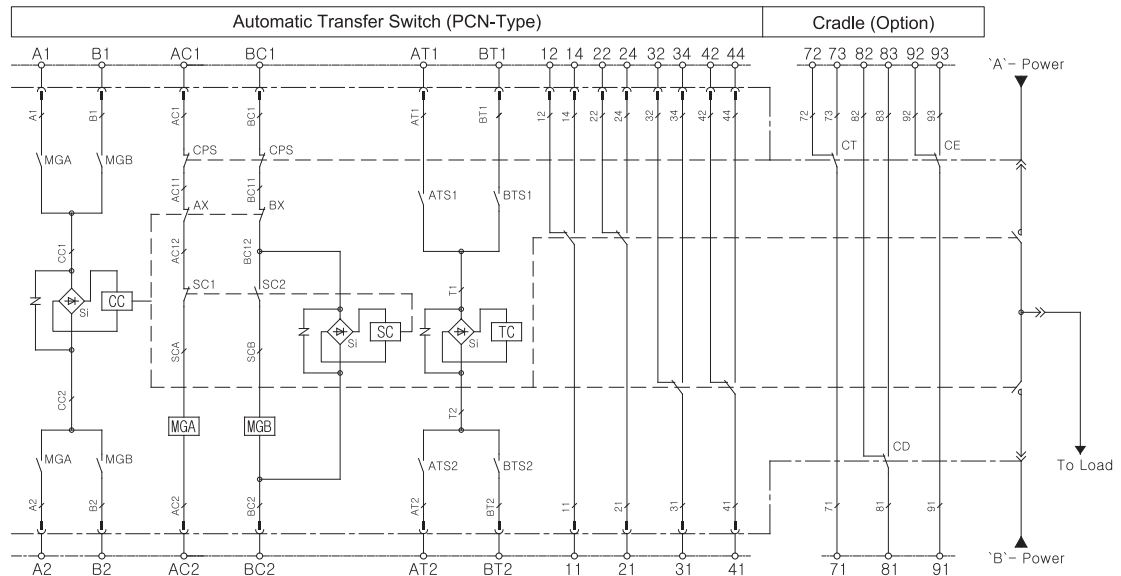
ATS(800~6300A)



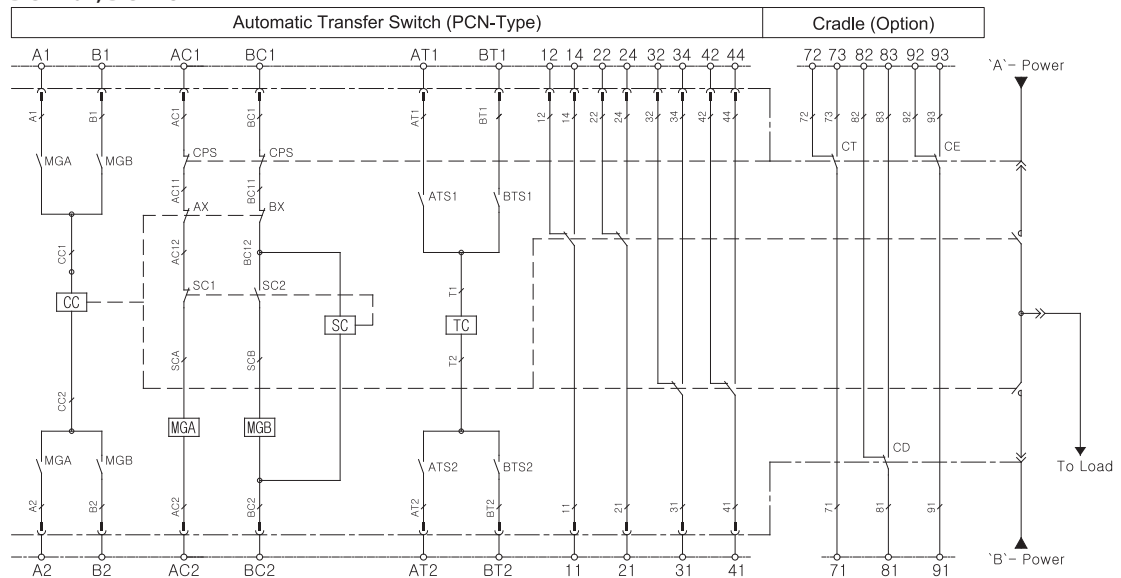
## Circuit Diagram

800A~1600A Draw Out

AC 110V, AC 220V



DC 110V, DC 125V



|          |                               |            |                                   |
|----------|-------------------------------|------------|-----------------------------------|
| A1, A2   | A-Power Terminal              | AX, BX     | Controller Switch                 |
| B1, B2   | B-Power Terminal              | 11 ~ 24    | A-Power AUX Switch                |
| AC1, AC2 | A-Power Closing Terminal      | 31 ~ 44    | B-Power AUX Switch                |
| BC1, BC2 | B-Power Closing Terminal      | ATS1, ATS2 | A-Power Tripping Control Switch   |
| AT1, AT2 | A-Power Tripping Terminal     | BTS1, BTS2 | B-Power Tripping Control Switch   |
| BT1, BT2 | B-Power Tripping Terminal     | SC1, SC2   | Selective Switch                  |
| CC       | Closing Coil                  | Si         | Silicon Rectifier                 |
| SC       | B-Power Selective Coil        | CPS        | Closing Preventing Switch         |
| TC       | Tripping Coil                 | CD         | Contacts of Disconnected Position |
| MGA      | A-Power Closing Magnetic Coil | CT         | Contacts of Test Position         |
| MGB      | B-Power Closing Magnetic Coil | CE         | Contacts of Connected Position    |



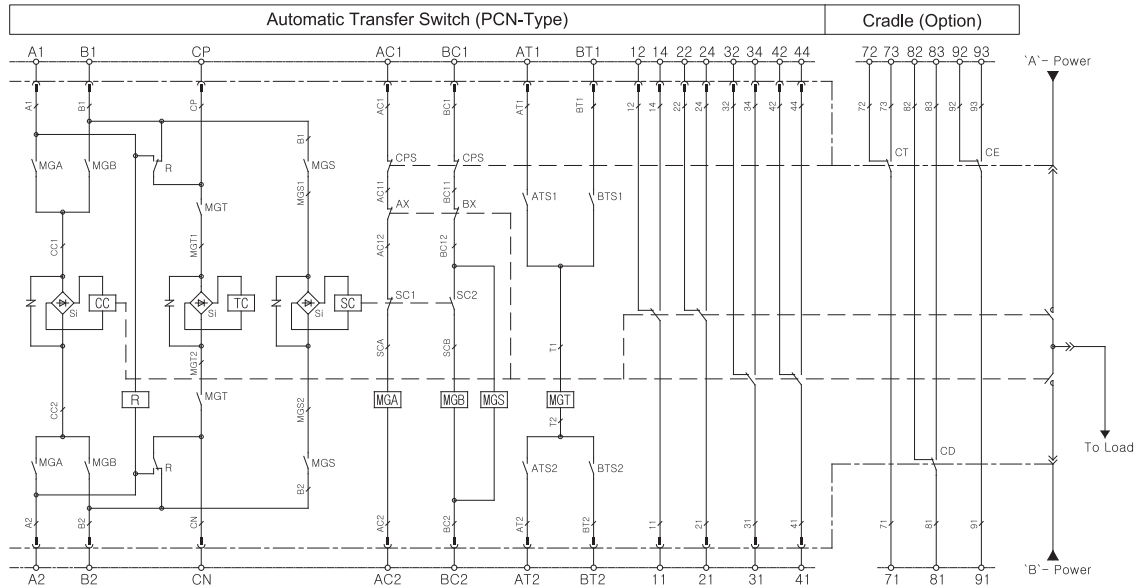


## ATS(800~6300A)

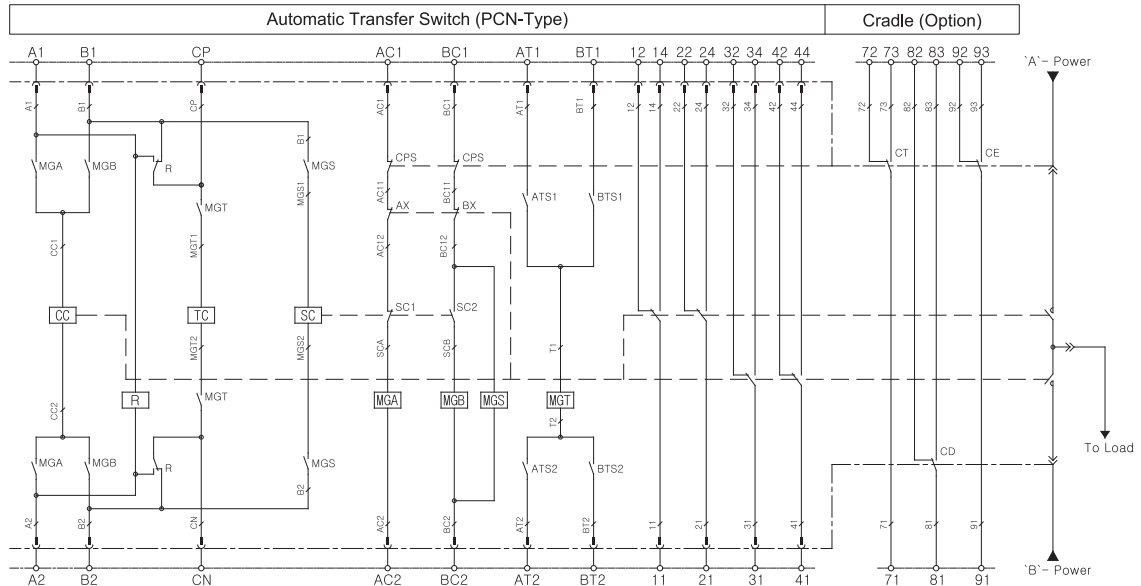
### Circuit Diagram

### 2000A~6300A Draw Out

#### AC 110V, AC 220V



#### DC 110V, DC 125V



|          |                               |            |                                   |
|----------|-------------------------------|------------|-----------------------------------|
| A1, A2   | A-Power Terminal              | MGT        | Tripping Magnetic Coil            |
| B1, B2   | B-Power Terminal              | AX, BX     | Controller Switch                 |
| AC1, AC2 | A-Power Closing Terminal      | 11 ~ 24    | A-Power AUX Switch                |
| BC1, BC2 | B-Power Closing Terminal      | 31 ~ 44    | B-Power AUX Switch                |
| AT1, AT2 | A-Power Tripping Terminal     | ATS1, ATS2 | A-Power Tripping Control Switch   |
| BT1, BT2 | B-Power Tripping Terminal     | BTS1, BTS2 | B-Power Tripping Control Switch   |
| CC       | Closing Coil                  | SC1, SC2   | Selective Switch                  |
| SC       | B-Power Selective Coil        | SI         | Silicon Rectifier                 |
| TC       | Tripping Coil                 | CPS        | Closing Preventing Switch         |
| MGA      | A-Power Closing Magnetic Coil | CD         | Contacts of Disconnected Position |
| MGB      | B-Power Closing Magnetic Coil | CT         | Contacts of Test Position         |
| MGS      | Selective Magnetic Coil       | CE         | Contacts of Connected Position    |



## Standard Operating Conditions

Ambient Temperature: -5°C~+40°C (but, the average temperature for 24 hours shall be lower than +35°C)

Altitude: Below 2000m

Environmental conditions

Relative humidity shall be less than 85% at max. temp. +40°C, less than 90% at 20°C

It shall not be allowed to use or store within the area of petrochemicals, ammonia, and corrosive gas.

Storage Temp.: -20°C~+60°C (but, the average temperature for 24 hours shall be lower than +35°C)

## ► Applicable current by the temperature

Under the environment with over than 40°C, please note the rating current as follow

Unit : Ampere

| Ambient temperature \ Rated current | 630A | 800A | 1000A | 1250A | 1600A | 2000A | 2500A | 3150A | 4000A | 5000A |
|-------------------------------------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| 40°C                                | 630  | 800  | 1,000 | 1,250 | 1,600 | 2,000 | 2,500 | 3,150 | 4,000 | 5,000 |
| 45°C                                | 630  | 800  | 1,000 | 1,250 | 1,600 | 2,000 | 2,500 | 3,150 | 4,000 | 5,000 |
| 50°C                                | 630  | 800  | 1,000 | 1,250 | 1,600 | 2,000 | 2,500 | 3,150 | 4,000 | 5,000 |
| 55°C                                | 630  | 800  | 1,000 | 1,250 | 1,550 | 2,000 | 2,450 | 3,000 | 3,900 | 4,850 |
| 60°C                                | 630  | 800  | 1,000 | 1,200 | 1,500 | 2,000 | 2,350 | 2,900 | 3,750 | 4,700 |
| 60°C ~ 100°C                        | 315  | 400  | 500   | 630   | 700   | 1,000 | 1,200 | 1,300 | 2,000 | 2,500 |

Note) IEC 60947-1 Standard is applied to the data for 40°C.

## ► Bolt tightening torque (for nut)

Class : 8.8

|              | M4      | M5      | M6       | M8        | M10     | M12       | M16       | M20       |
|--------------|---------|---------|----------|-----------|---------|-----------|-----------|-----------|
| Torque (N.m) | 2.5~3.2 | 5.0~6.3 | 8.7~10.9 | 21.1~26.4 | 41.6~52 | 71.6~89.5 | 117.6~222 | 358.4~448 |

## ► Selection of TR Capacity

TR capacity should be selected more than the value calculated by the following formula.

Operation Voltage x Operation Current x 0.5 = ( ) VA

e.g.) Operation Voltage AC 220V, Operation Current 4A  $220 \times 4 \times 0.5 = 440\text{VA}$ , TR capacity of more than 440 VA is recommended.

## ► Selection of Control Relay

The capacity of UVR, Operating Relay and Timer contactor should be higher than ATS operating current.

Note : If the control power source is not stable, it is recommended to use Automatic Voltage Regulator.

# Safety Manual

## ► Safety Notice

This safety manual describes major informations for safe operation. Before handling this machinery, please be acquainted thoroughly with this manual, product handling, safety information and all other precautions before installation or maintenance.



### Danger

Emergency situation, which may cause death or serious disaster if there is mistake.



### Caution

A potentially problematic situation, which may cause slight personal injury and/or damage.

These safety notices are divided as "Danger" and "Caution" according to the hazard level.



### Caution

- Do not enter the area under the Automatic Transfer Switches (ATS) when it is lifted or suspended using a lifter or chain block. The ATS may suddenly drop.  
The ATS is heavy. Entering such an area may cause serious injury.



### Caution

- Installation should be performed by qualified persons.
- Prior to commencing any installation, open the upstream circuit breaker to isolate all power/voltage sources.  
**Otherwise, electric shock may occur.**
- Tighten terminal screws securely according to the specified torque.  
**Otherwise, a fire may occur.**
- Fix the Drawout type ATS firmly on a flat level using mounting screws.  
**Otherwise, drawout operation may cause the ATS to fall.**
- Avoid blocking of ATS's arc gas vents to ensure the adequate arc space.  
**Blocking of the arc gas vents could result in failure of ATS.**
- Do not place the ATS in such area of high temperature, high humidity, dusty air, corrosive gas, strong vibration and shock or other unusual conditions.  
**Installation in such areas could cause a fire or malfunction.**
- Be careful to prevent foreign material of debris, concrete powder, iron powder, etc and rainwater from entering into the ATS.  
**These materials inside the ATS could cause a fire or malfunction.**
- For 4 pole ATS, connect the neutral wire of 3-phase, 4-wire cable to N-phase (on the right side).

A graphic with a blue background showing a perspective view of a grid of lines receding towards a bright light source on the horizon.

## Operation Precautions



### Danger

- Do not touch the live terminal parts.  
**Otherwise, electric shock may occur.**
- Do not leave the ATS in the drawout position.  
**The ATS is heavy. Dropping the ATS could cause serious injury.**



### Caution

- The cable size of control power should be selected considering operation current.  
**Otherwise, a fire could occur.**
- ATS should be operated by manual handle only under no-load condition. Operation by manual handle is strictly prohibited except emergency case.  
**Otherwise, damage to the ATS may occur.**

A graphic with a blue background showing a perspective view of a grid of lines receding towards a bright light source on the horizon.

## Maintenance and Inspection Precautions



### Caution

- Maintenance, inspection or components replacement should be performed by qualified persons.
- Prior to commencing any work, open the upstream circuit breaker to isolate all power/voltage sources.  
**Otherwise, electric shock may occur.**
- Prior to commencing internal inspection for ATS, Be sure that main circuit and control source of ATS should be off.  
**Otherwise, fingers or tools could be pinched in the internal mechanism, causing injury**
- Retighten the terminal screws periodically according to the specified torque.  
**Otherwise, a fire may occur.**
- Retighten the arcing contact mounting screws periodically according to the specified torque.  
**Otherwise, a fire or malfunction may occur.**
- Be sure to reinstall the arc chute if removed.  
**Failure to do so or incorrect installation may result in a fire or cause of burns.**
- Do not touch the live parts or structural parts close to live parts immediately after stop of power supply to ATS.  
**Otherwise, remaining heat may cause burns.**
- Do not approach near the arc gas vent of arc chute while ATS is under transfer.  
**Otherwise, burns may result from high temperature of arc gas.**

