



Technical catalogue

# Automatic Transfer Switches



# ATS

## Automatic Transfer Switches

An automatic transfer switch continuously monitors utility power. When the utility power failures, the transfer switch will signal the generator to start. Once the generator has reached operating speeds with correct frequency and voltage levels, the transfer switch will disconnect the utility source and connect the generator.

After the utility power is restored, the automatic transfer switch returns the load to the grid. The generator automatically shuts down



**Hankwang**  
Electric Co., Ltd.

@ Automatic Transfer Switches – ATS

is a collaborative product between two electrical equipment manufacturers Hankwang and BTB electric



# Contents

- 02 General
- 03 Automatic Transfer Switches - N type
- 06 Automatic Transfer Switches - TN type
- 15 Automatic Transfer Breaker - ATB type
- 30 Automatic Transfer Switches Controller – Hanpro1000
- 33 Automatic Transfer Switches Controller – ATbS C55

## General

### Applied standard

- IEC-60947-6-1
- IEC-60947-2-1
- BS 4652 part 1
- VDE 0660
- ANSI (27.13)
- KSC 8325

### Operating conditions

- Ambient temperature: Automatic Transfer Switches can be used in ambient conditions where the surrounding air temperature varies between -20°C and +60°C, and stored in ambients with temperatures between -25°C and +65°C
- Altitude: Below 2,000m above sea level.
- Mounting conditions: Perpendicularity and angularity  $\leq 10^\circ$

### Unique features

- Protection function of Circuit Breaker with digital overcurrent unit. Protection provided for overload, short circuit and ground faults.
- By-Pass Operation without interruption to load side.
- Manual operating facility available.
- Overlapping Neutral Pole.
- ATS and By-Pass switches are withdrawable.
- Single frame compact design saving space.
- User-friendly microprocessor controller.
- LCD display with monitoring and measurements.

## Application scope

Electromagnetic operation, coupled with a power-saving structure facilitated by the transient excitation method, ensures a dependable power supply. Automatic Transfer Switches of the N type are well-suited for factories, hospitals, and residential settings with modest power requirements, necessitating swift switching between power sources.



## Salient features

- Outstanding switching performance and reliable operational function.
- Compact and lightweight design enabling rapid switching (within 15 milliseconds).
- The molded breaking component, completely sealed, not only prevents electric shock but also guards against electric accidents caused by foreign substances.
- The operation sequence supports both AC and DC power sources.
- Ensures safety under varying flow-current conditions, with minimized operating current maximizing flow current performance.
- Robust protection is provided through a latch structure.
- Features a double throw type design for enhanced functionality.

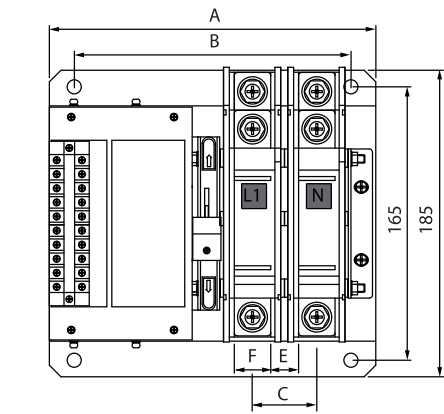
## Image and structure



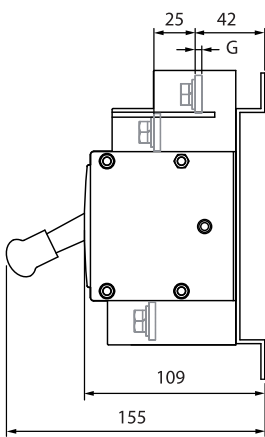
## Selection table

Type		HK-63/125N	HK-200/250N
Rated operational current, $I_n$		63/125A	200/250A
Rated Operational Voltage, $U_e$		AC600V, DC125V	
Rated Insulation Voltage, $U_i$		690V	
Impulse Withstand Voltage, $U_{imp}$		8kV	
No. of Pole		2, 3, 4	
Powercable connection method		Front bus bar connection	
Reference Standard		IEC 60947-6-1 / UL1008	
Rated short-time withstand current, $I_{cw}$		5kA	
Rated short-circuit making capacity, $I_{cm}$		5kA	
Switch capacity	Class	AC3, DC1	
Life time	Electric	5000 time	
	Mechanic	10000 time	
Switching frequency	time/h	150 time/h	
Switching sequence		A ↔ B	
Operating Time	Break(Opening)	≤ 50ms	
	Make Closing	≤ 30ms	
	Make delay(Off)	-	
Operating Voltage & Current	AC110/120V	35A	
	AC220/240V	20A	
Control voltage	Max	110% Rated operating voltage	
	Min	85% Rated operating voltage	
Withstand Voltage for Main circuit		2500V/60s	
Withstand Voltage for Control circuit		1500V/60s	
Weight	2P	4kg	4.5kg
	3P	5kg	5.6kg
	4P	5.5kg	5.9kg
Dimensions (WxLxH)	2P	190x155x185 mm	197x155x185 mm
	3P	225x155x185 mm	236x155x185 mm
	4P	265x155x185 mm	275x155x185 mm

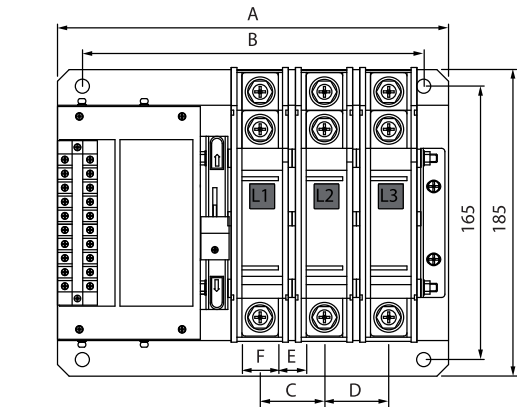
Dimensions



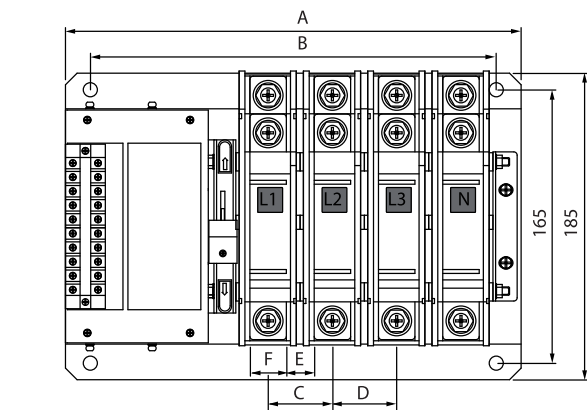
2P



Side View



3P



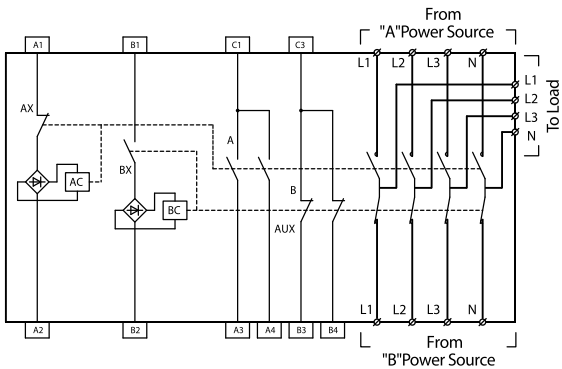
4P

Front View

63A ~ 125A	(mm)		
	2P	3P	4P
A	190	225	265
B	160	195	235
C	36		
D	36		
E	16		
F	20		
G	3		

200A 250A	(mm)		
	2P	3P	4P
A	197	236	275
B	167	206	245
C	38.5		
D	38.5		
E	16.5		
F	22		
G	4		

AC Control sequence



Part Name		Operation Terminal)	
AC	A Close Coil	A1, A2	"A" Power Terminal
BC	B Close Coil	B1, B2	"B" Power Terminal
AUX	Auxiliary Switch		
AX, BX	Control switch		

## Application scope

Electromagnetic operation, paired with an energy-saving design supported by transient excitation, guarantees reliable power. TN type automatic power transfer switches are highly suitable for environments such as factories, construction sites, and apartment complexes that demand substantial power sources and necessitate seamless switching between power sources via the "OFF" position.



## Salient features

- Excellent switching performance and unfailing operation function.
- Most suitable for emergency power facility which is neutral position.
- The molded breaking component, completely sealed, not only prevents electric shock but also guards against electric accidents caused by foreign substances.
- The operation sequence supports both AC and DC power sources.
- Ensures safety under varying flow-current conditions, with minimized operating current maximizing flow current performance.
- Robust protection is provided through a latch structure.
- Features a double throw type design for enhanced functionality.

## Image and structure



Selection table

Type		HK-100/125TN	HK-200/250TN
Rated operational current, $I_n$		100/125A	200/250A
Rated Operational Voltage, $U_e$		AC600V, DC125V	
Rated Insulation Voltage, $U_i$		690V	
Impulse Withstand Voltage, $U_{imp}$		8kV	
No. of Pole		2, 3, 4	
Powercable connection method		Front bus bar connection	
Reference Standard		IEC 60947-6-1 / UL1008	
Rated short-time withstand current, $I_{cw}$		5kA	7kA
Rated short-circuit making capacity, $I_{cm}$		5kA	7kA
Switch capacity	Class	AC3, DC1	
Life time	Electric	5000 time	
	Mechanic	10000 time	
Switching frequency	time/h	150 time/h	
Switching sequence		$A \leftrightarrow B, A \leftrightarrow OFF \leftrightarrow B$	
Operating Time	Break(Opening)	$\leq 30ms$	
	Make Closing	$\leq 60ms$	
	Make delay(Off)	$\leq 30ms$	
Operating Voltage & Current	AC110/120V	20A	
	AC220/240V	10A	
Control voltage	Max	110% Rated operating voltage	
	Min	85% Rated operating voltage	
Withstand Voltage for Main circuit		2500V/60s	
Withstand Voltage for Control circuit		1500V/60s	
Weight	2P	5kg	6kg
	3P	6.5kg	8kg
	4P	8kg	9.5kg
Dimensions (WxLxH)	2P	220x120x215 mm	
	3P	257x120x215 mm	
	4P	294x120x215 mm	

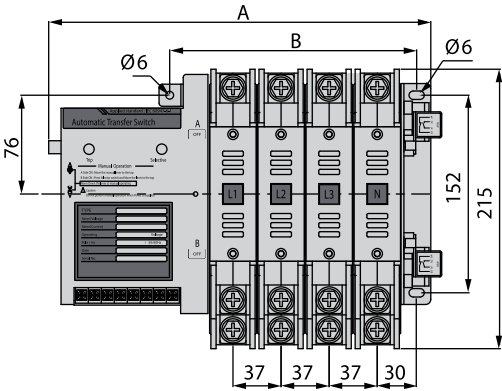


**Selection table**

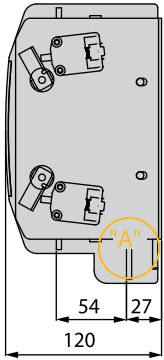
Type		HK-400/500TN	HK-630TN
Rated operational current, $I_n$		400/500A	630A
Rated Operational Voltage, $U_e$		AC600V, DC125V	
Rated Insulation Voltage, $U_i$		690V	
Impulse Withstand Voltage, $U_{imp}$		8kV	
No. of Pole		3, 4	
Powercable connection method		Front bus bar connection	
Reference Standard		IEC 60947-6-1 / UL1008	
Rated short-time withstand current, $I_{cw}$		10kA	12kA
Rated short-circuit making capacity, $I_{cm}$		10kA	12kA
Switch capacity	Class	AC3, DC1	
Life time	Electric	5000 time	
	Mechanic	10000 time	
Switching frequency	time/h	150 time/h	
Switching sequence		$A \leftrightarrow B, A \leftrightarrow OFF \leftrightarrow B$	
Operating Time	Break(Opening)	$\leq 30ms$	
	Make Closing	$\leq 60ms$	
	Make delay(Off)	$\leq 30ms$	
Operating Voltage & Current	AC110/120V	20A	24A
	AC220/240V	10A	12A
Control voltage	Max	110% Rated operating voltage	
	Min	85% Rated operating voltage	
Withstand Voltage for Main circuit		2500V/60s	
Withstand Voltage for Control circuit		1500V/60s	
Weight	3P	7.5kg	13kg
	4P	10kg	15kg
Dimensions (WxLxH)	3P	286x120x260 mm	344x145x304 mm
	4P	332x120x260 mm	405x145x304 mm

HK-800TN	HK-1000/1250TN	HK-1600TN	HK-2000/2500TN	HK-3000/3200TN
800A	1000/1250A	1600A	2000/2500A	3000/3200A
AC600V, DC125V			AC690V, DC250V	
690V			800V	
8kV				
3, 4				
Rear bus bar connection				
IEC 60947-6-1 / UL1008				
16kA	25kA	32kA	50kA	
16kA	25kA	32kA	50kA	
AC3, DC1			AC3, DC1	
5000 time			3000 time	
10000 time			5000 time	
150 time/h			100 time/h	
A ↔ B, A ↔ OFF ↔ B				
≤ 30ms		≤ 30ms	≤ 35ms	
≤ 60ms		≤ 130ms	≤ 150ms	
≤ 30ms		≤ 30ms	≤ 30ms	
24A		30A	35A	
12A		15A	18A	
110% Rated operating voltage				
85% Rated operating voltage				
2500V/60s			3000V/60s	
1500V/60s			1500V/60s	
14kg	22kg	24kg	50kg	84kg
16kg	26kg	28kg	60kg	100kg
344x184x241 mm	417x182x270 mm	457x264x380 mm	500x412x465 mm	
405x184x241 mm	502x182x241 mm	540x264x380 mm	640x412x465 mm	

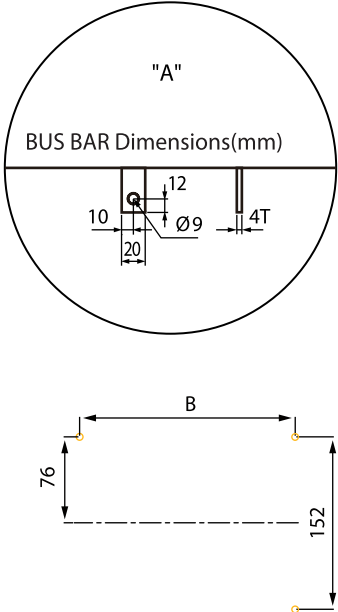
Dimensions  
Front type 100A~250A



Front View

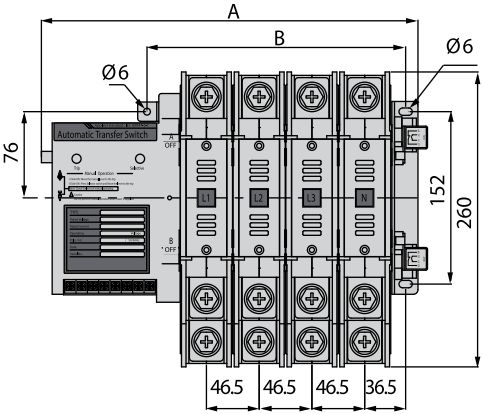


Side View

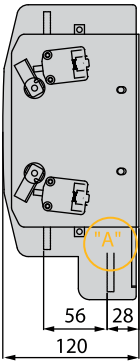


100A ~ 250A	(mm)		
	2P	3P	4P
A	220	257	294
B	116	153	190

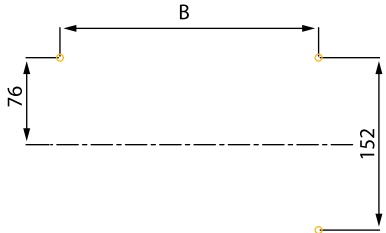
Front type 400A~500A



Front View



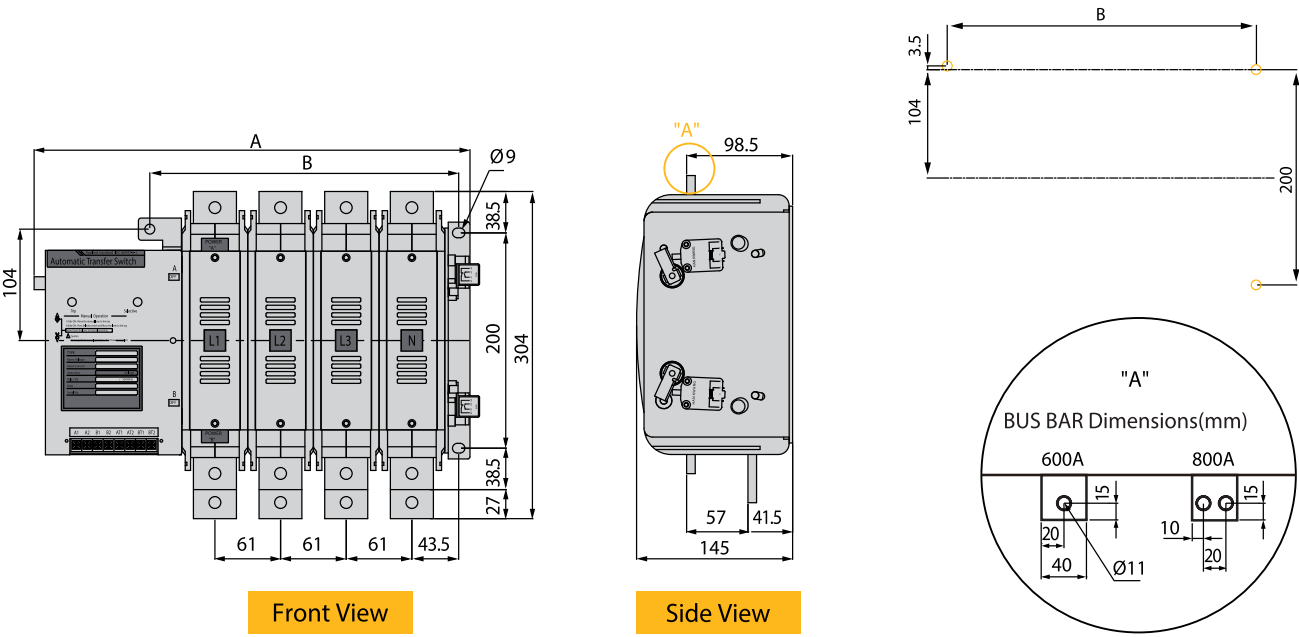
Side View



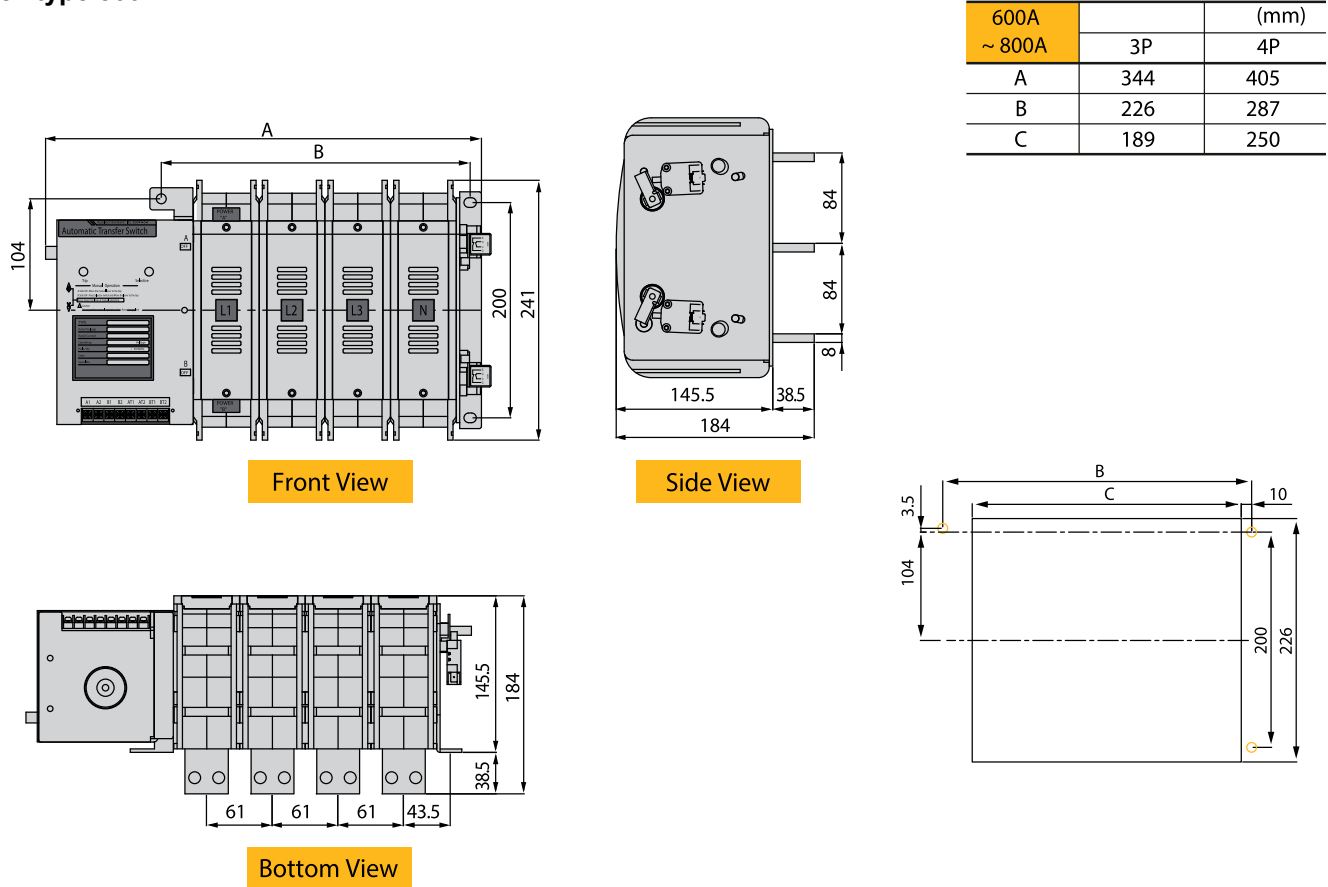
400A ~ 500A	(mm)	
	3P	4P
A	286	332
B	182	228

Dimensions

Front type 630A



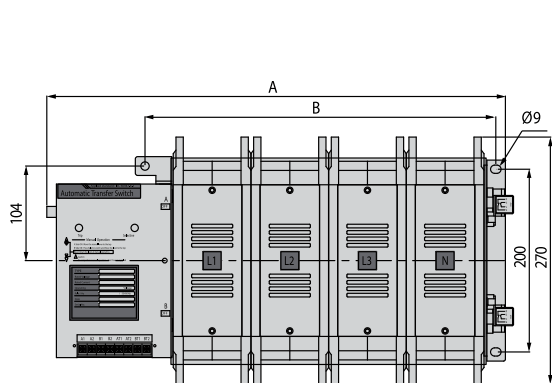
Back type 800A



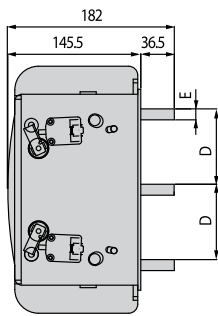


Dimensions

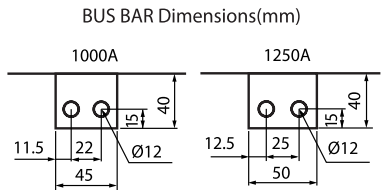
Back type 1000A~1250A



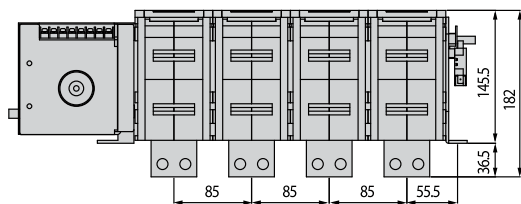
Front View



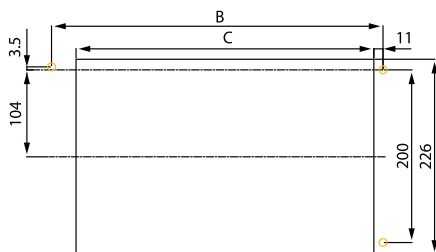
Side View



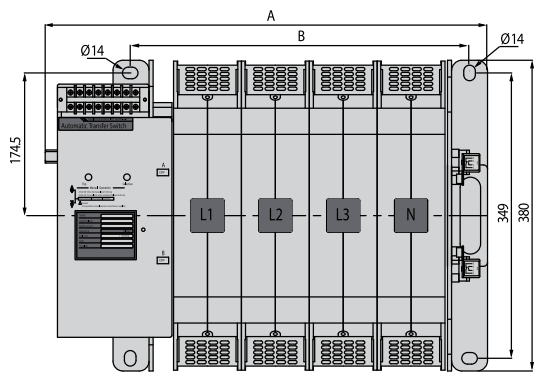
(mm)	1000A		1250A	
	3P	4P	3P	4P
A	417	502	417	502
B	299	384	299	384
C	260	345	260	345
D	83.5		82.5	
E	10		12	



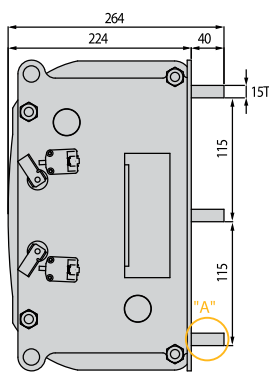
Bottom View



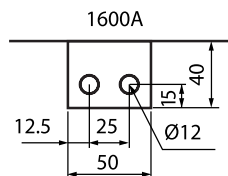
Back type 1600A



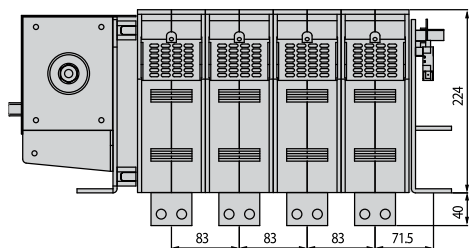
Front View



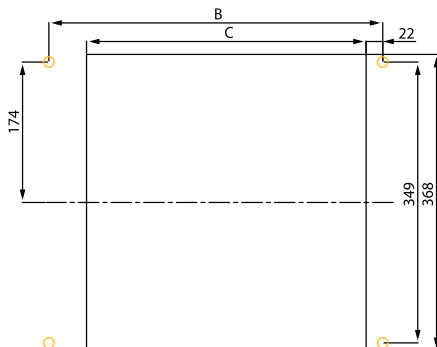
Side View



1600A	(mm)	
	3P	4P
A	457	540
B	332	415
C	264	347

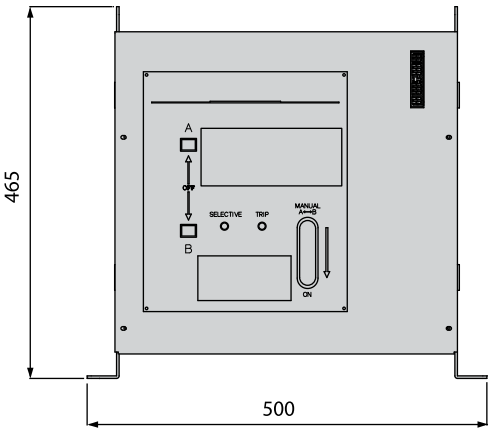


Bottom View

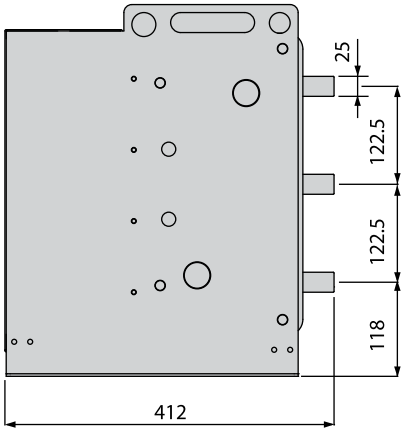


Dimensions

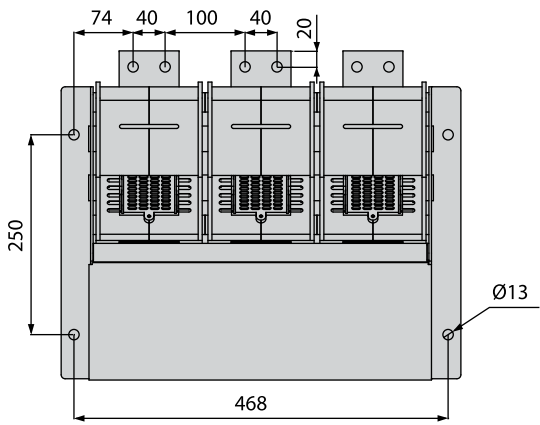
Back type 2000A~3200A 3P



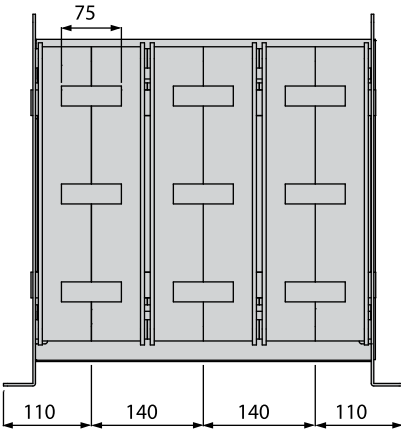
Front View



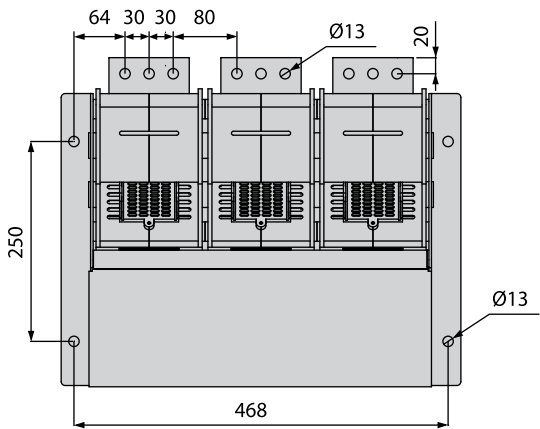
Side View



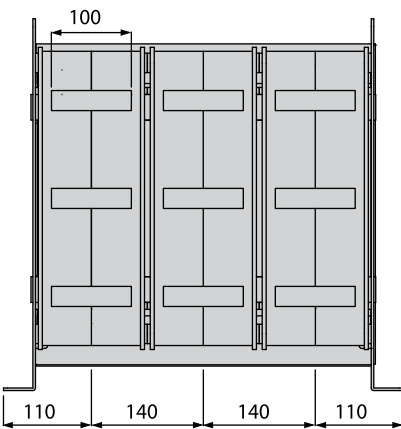
2000~2500A Bottom View



2000~2500A Back View

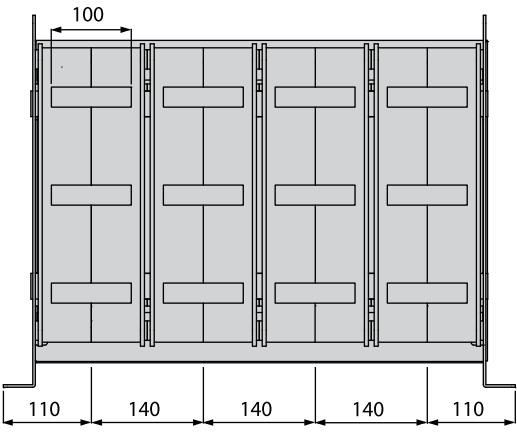
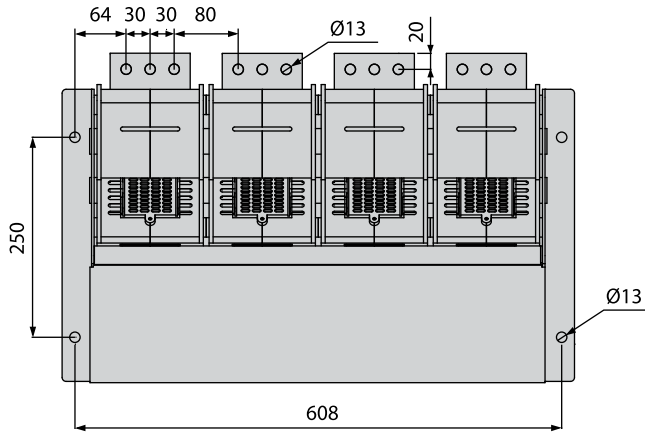
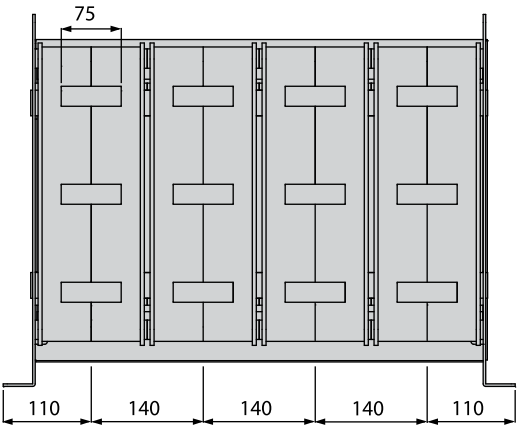
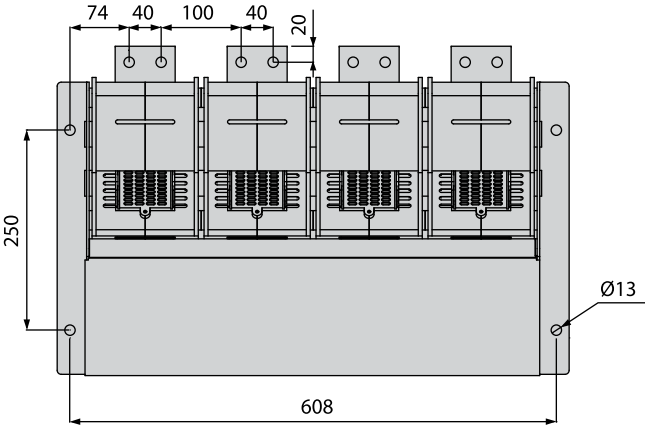
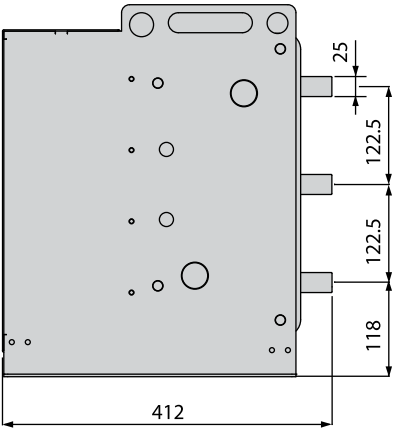
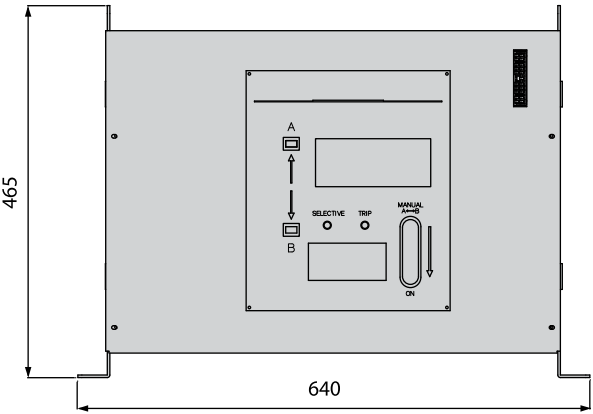


3200A Bottom View



3200A Back View

**Dimensions**  
**Back type 2000A~3200A 4P**



### Application scope

Automatic Transfer Breaker operates on the principle of electromechanical energy, compatible with ACB operation.

Automatic Transfer Breaker - ATB type possesses the capability to transmit power without disrupting the power supply to the load. It is designed to withstand substantial switching currents, making it particularly suitable for critical loads found in environments such as airports, hospitals, institutes, and high-tech industrial plants.



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### Salient features

- Based on IEC 60947-6-1, 2 AC-33B become 1 ATB combine
  - Compact and light design products with high breaking capacity
  - Closed transient transfer switch and bypass functional products
  - Synchronizing operation available between genset or between genset and main power
  - Breaker type contact structure
  - Protection relay (OCR, GR) available
  - Safety operation and movement applying high quality arc chamber at the breaking component
  - Safety flow-current condition, minimized operating current maximizes function of flow current performance
- 

### Image and structure



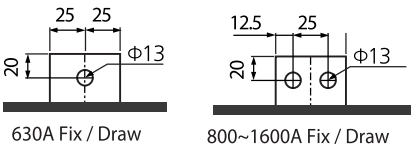
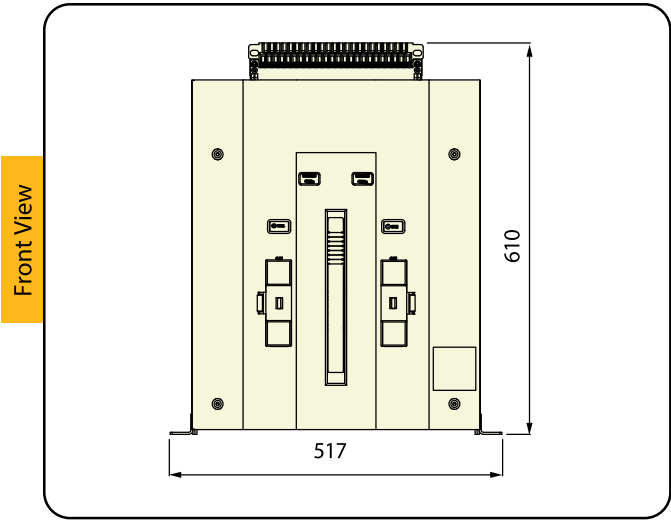


## Selection table

Type		ATB-06EX	ATB-08EX	ATB-10EX	ATB-12EX
Rated operational current, I <sub>n</sub>		630A	800A	1000A	1250A
Rated Operational Voltage, U <sub>e</sub>		690V			
Rated Insulation Voltage, U <sub>i</sub>		1000V			
Impulse Withstand Voltage, U <sub>imp</sub>		12kV			
No. of Pole		3, 4			
Neutral Pole		Overlapping Contact			
Power cable connection method		Front bus bar connection			
Reference Standard		IEC 60947-6-1			
Rated short-time withstand current, I <sub>cw</sub>	at 460V	50kA			
Rated short-circuit making capacity, I <sub>cm</sub>	at 460V	110kA			
Life time	Electric	3000 time			
	Mechanic	10000 time			
Max. Trip time		40ms			
Max. Closing time		60ms			
Time of Motor Charging [Max.]		10s			
Control voltage	Max	110% Rated operating voltage			
	Min	85% Rated operating voltage			
Withstand Voltage for Main circuit		3000V/60s			
Withstand Voltage for Control circuit		1500V/60s			
Weight	3P - Fixed	100	105	110	
	4P- Fixed	110	115	120	
	3P - Drawable	135	142	150	
	4P - Drawable	150	155	162	
Dimensions (WxLxH)	3P - Fixed	517x578x610			
	4P- Fixed	517x578x610			
	3P - Drawable	572x690x665			
	4P - Drawable	572x690x665			

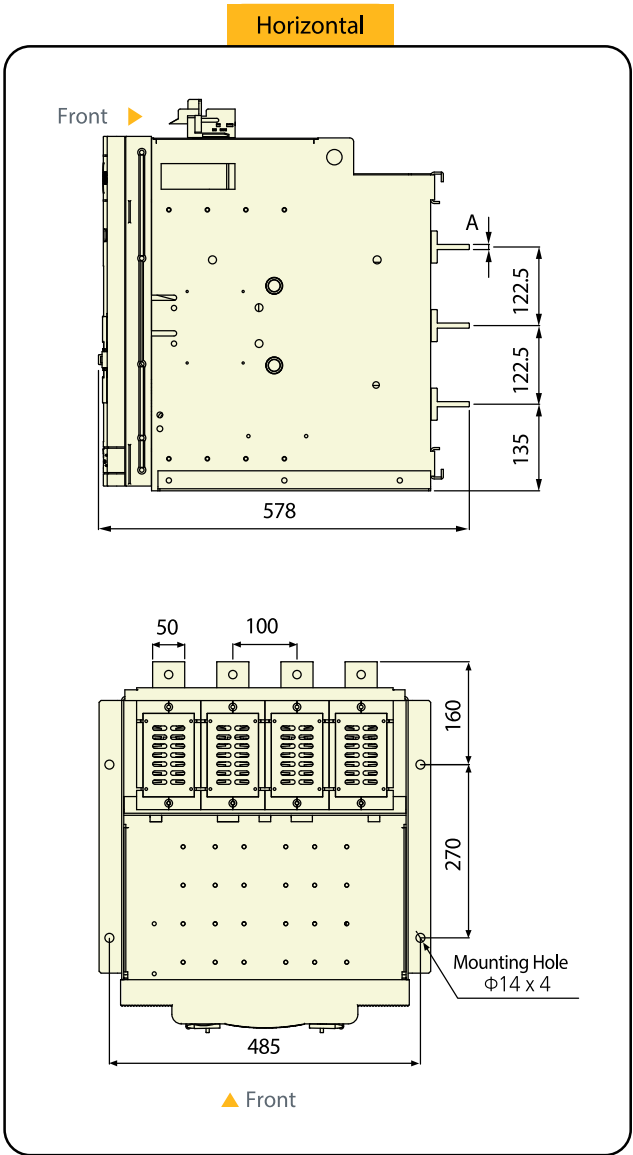
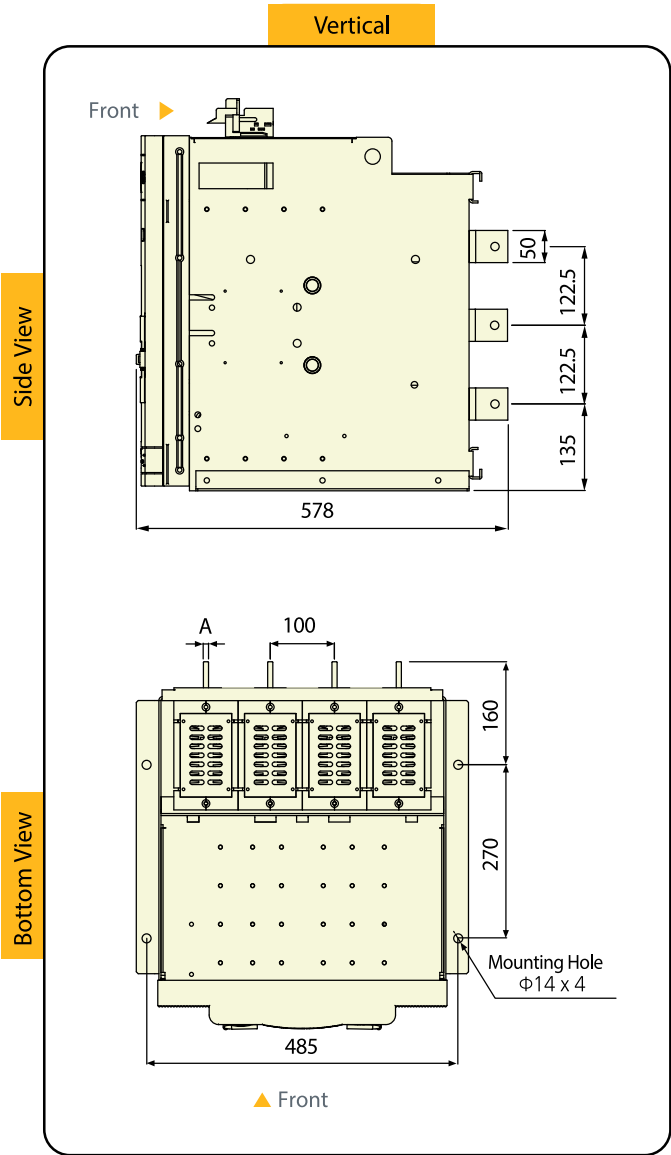
ATB-16EX	ATB-20EX	ATB-25EX	ATB-32EX	ATB-40EX	ATB-50EX	ATB-63EX
1600A	2000A	2500A	3200A	4000A	5000A	6300A
690V						
1000V						
12kV						
3, 4						3
Overlapping Contact						
Front bus bar connection						
IEC 60947-6-1						
50kA	65kA			85kA		100kA
110kA	143kA			187kA		220kA
3000 time				3000 time		
10000 time				6000 time		
40ms				50ms		
60ms				80ms		
10s				10s		
110% Rated operating voltage						
85% Rated operating voltage						
3000V/60s						
1500V/60s						
130	140	150	160	190	190	205
140	150	160	170	255	255	-
176	190	203	216	330	330	270
190	203	216	230	435	435	-
517x578x610	517x578x610			717x633x610		717x633x610
517x578x610	617x578x610			917x633x610		-
572x690x665	572x690x665			772x740x665		917x633x610
572x690x665	672x690x665			972x740x665		-

Dimensions  
630~1600A Fixed Type

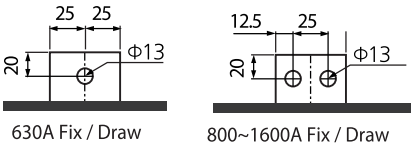
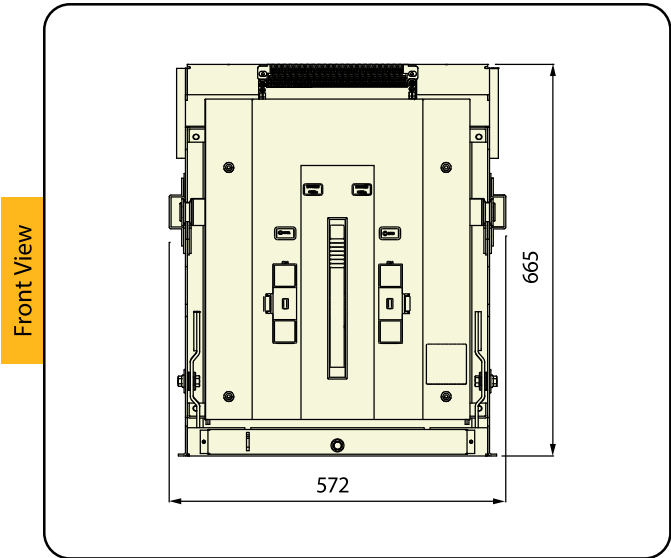


▲ BUS BAR Dimensions

	630~800A		1000A		1250A		1600A	
(mm)	3P	4P	3P	4P	3P	4P	3P	4P
A	8		10		12		15	

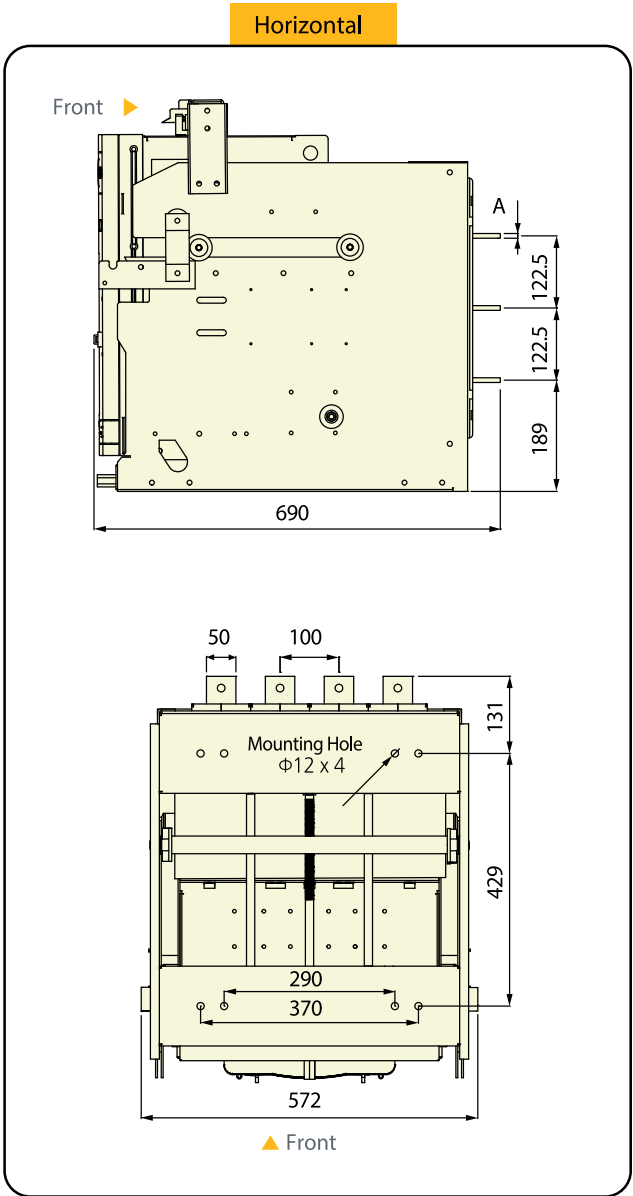
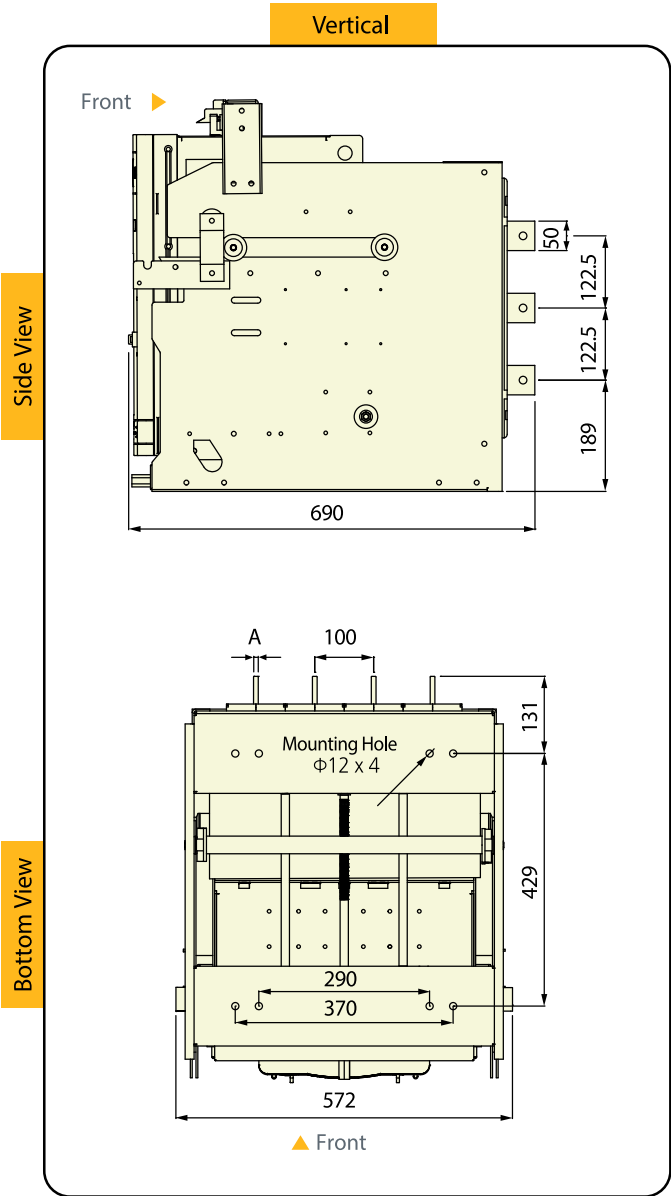


Dimensions  
630~1600A Drawable Type



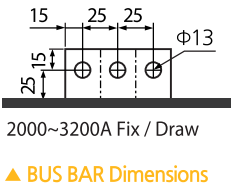
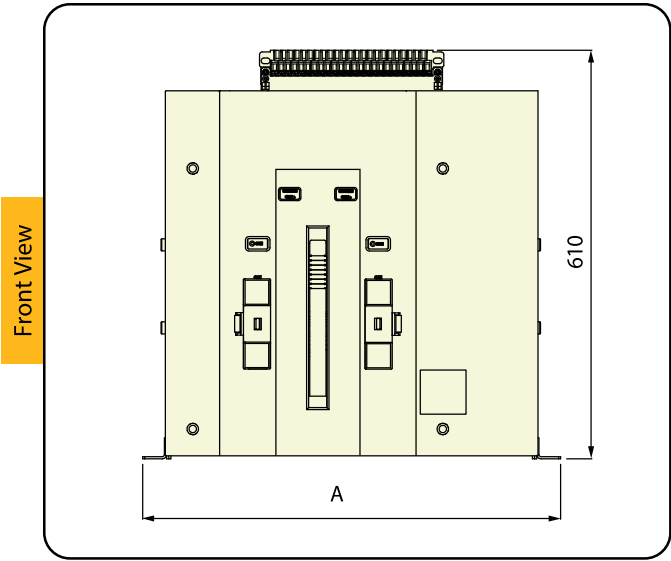
▲ BUS BAR Dimensions

	630~800A		1000A		1250A		1600A	
(mm)	3P	4P	3P	4P	3P	4P	3P	4P
A	8		10		12		15	

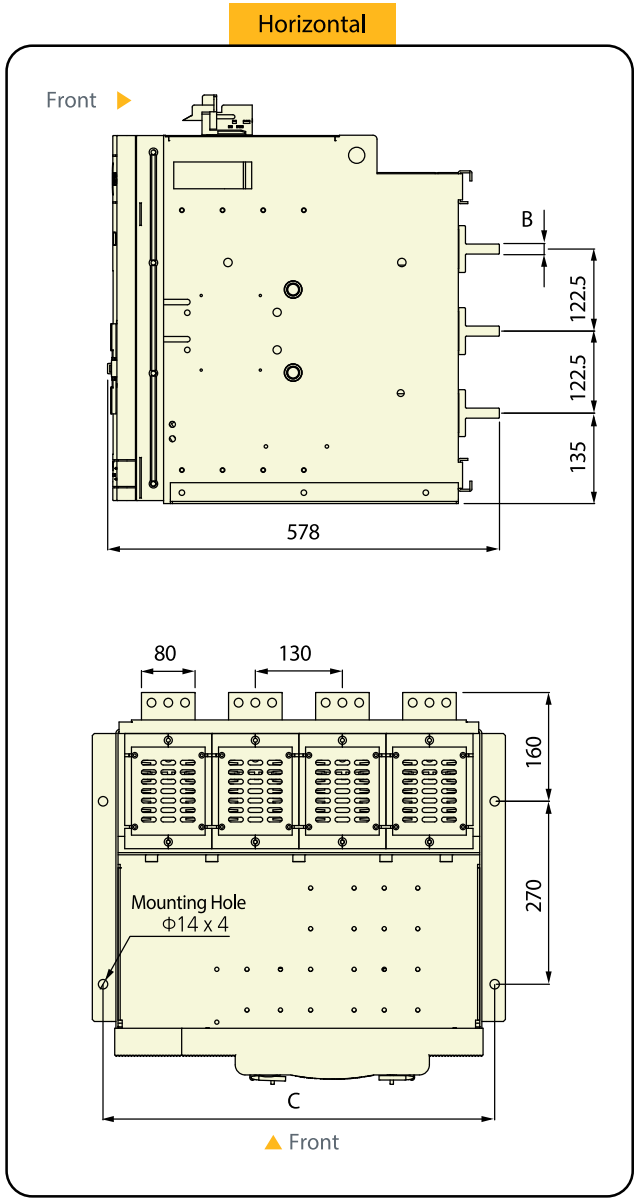
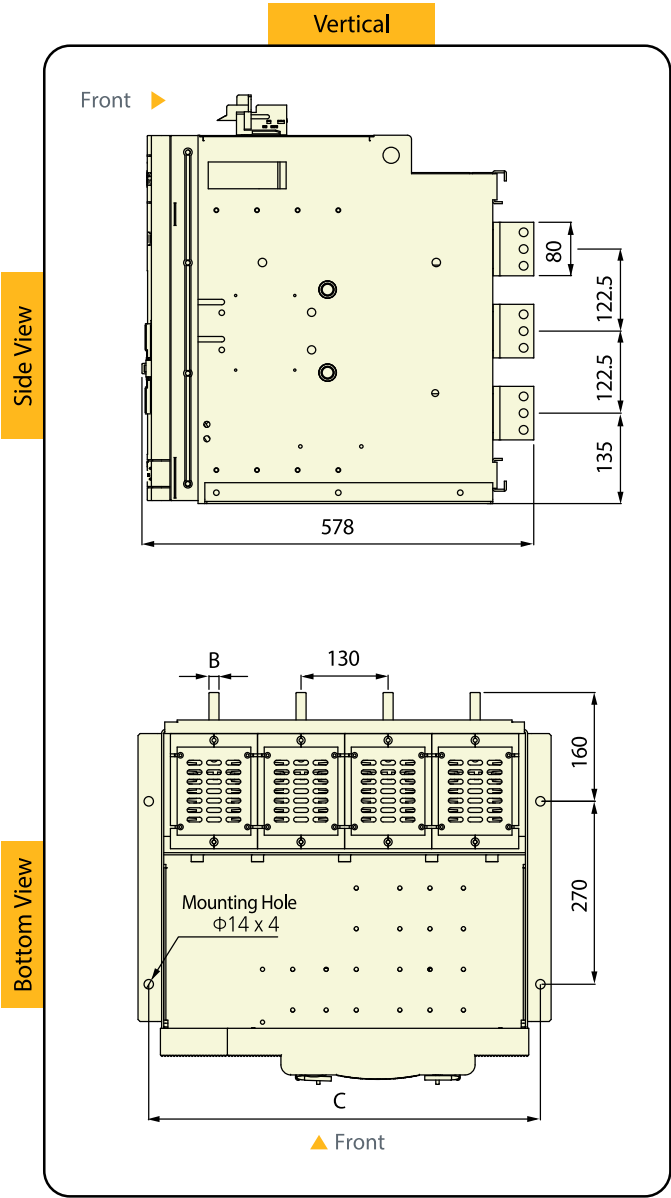




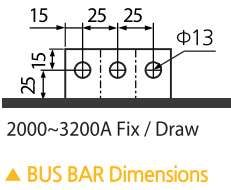
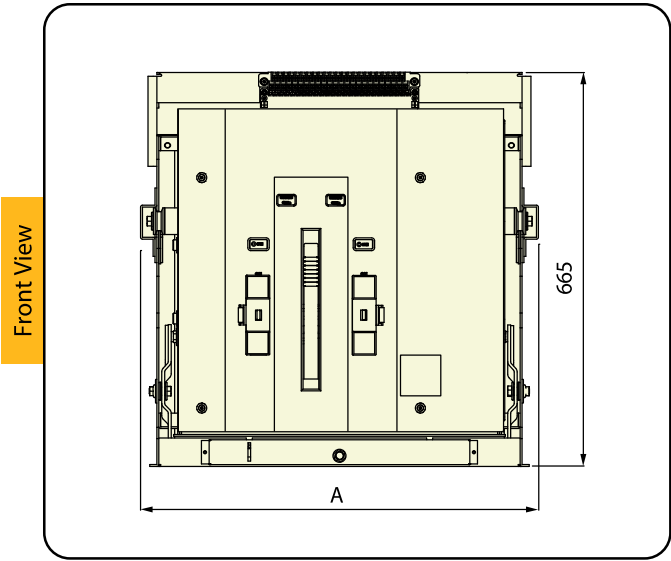
Dimensions  
2000~3200A Fixed Type



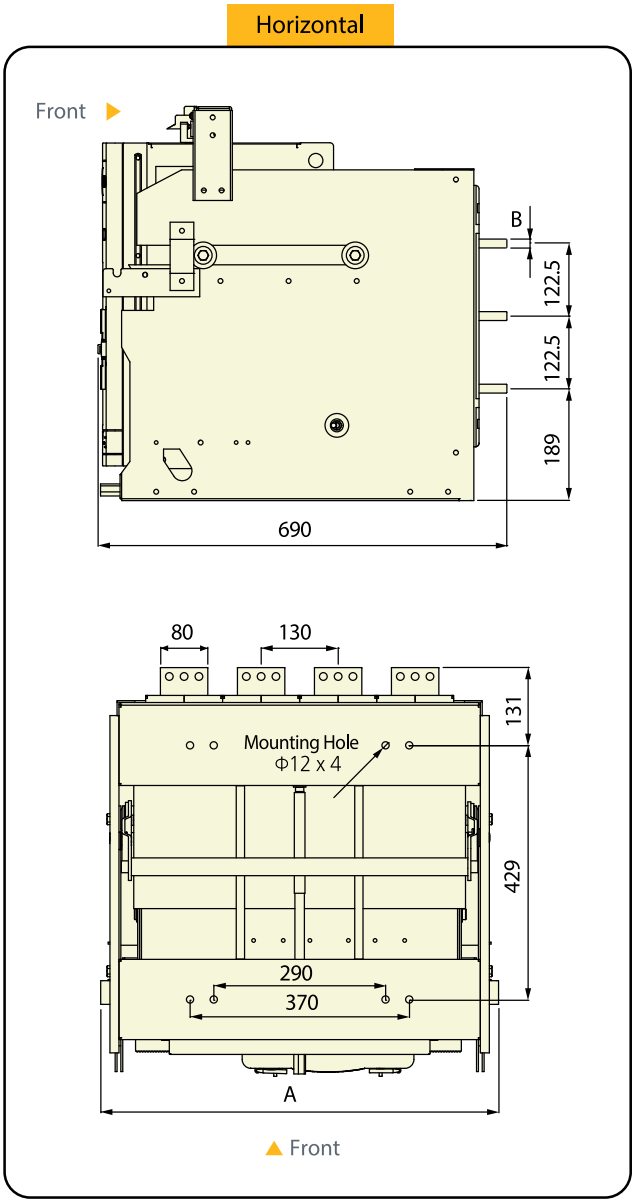
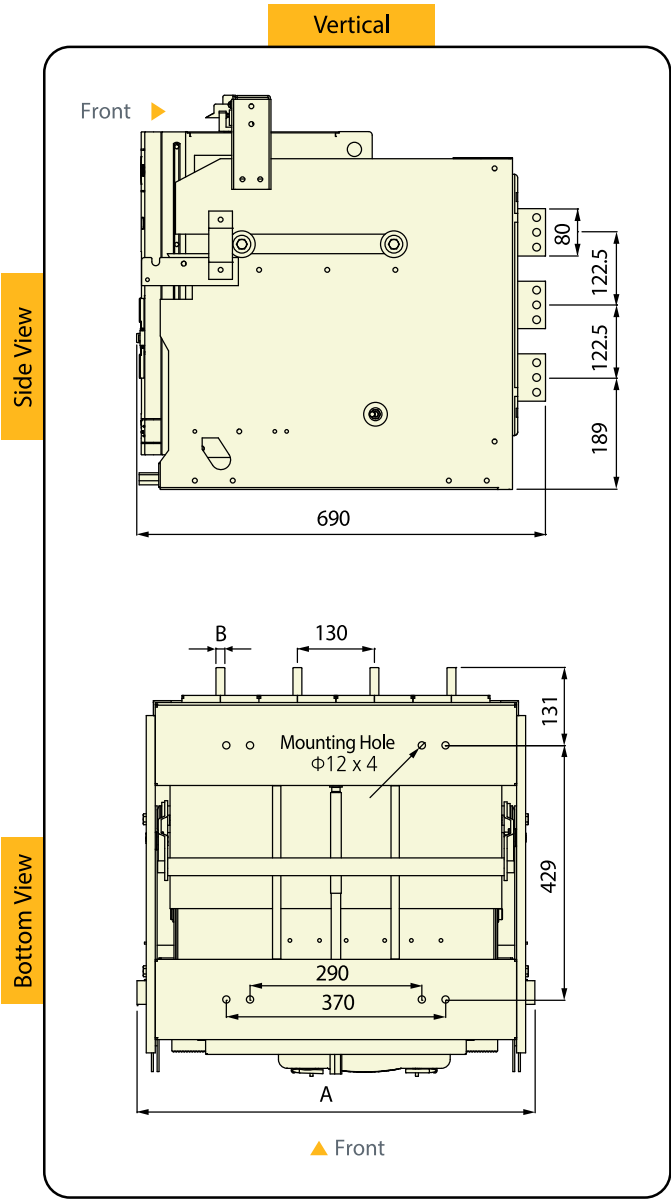
	2000A		2500A		3200A	
(mm)	3P	4P	3P	4P	3P	4P
A	517	617	517	617	517	617
B	15		20		25	
C	485	585	485	585	485	585



Dimensions  
2000~3200A Drawable Type

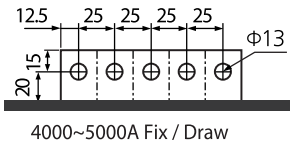
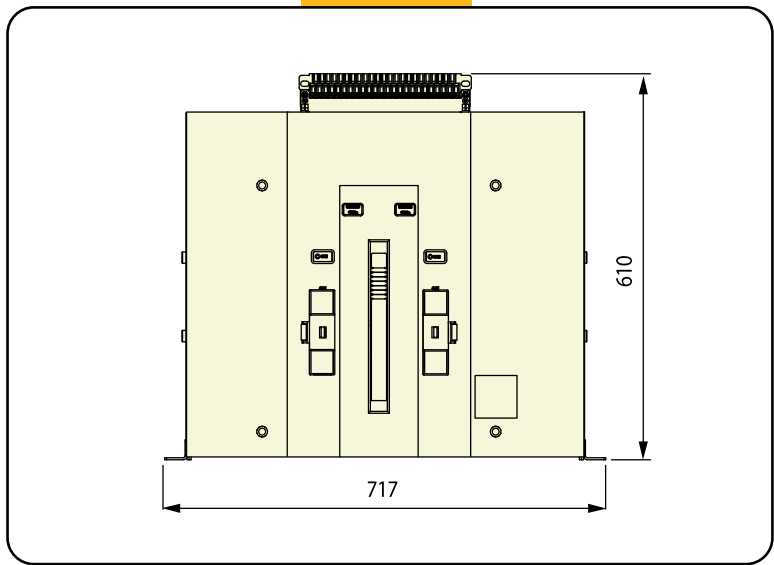


	2000A		2500A		3200A	
(mm)	3P	4P	3P	4P	3P	4P
A	572	672	572	672	572	672
B	15		20		25	



**Dimensions**  
**4000~5000A 3P Fixed Type**

Front View

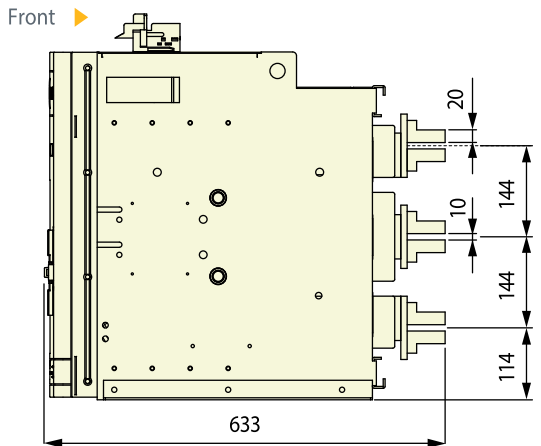
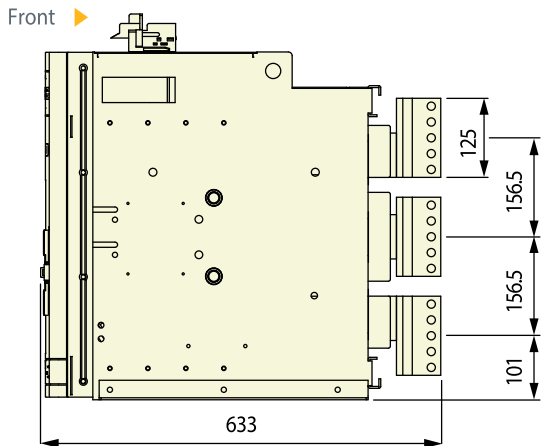


▲ BUS BAR Dimensions

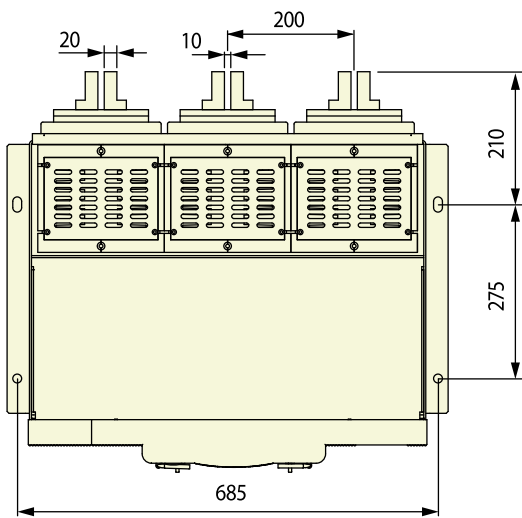
Vertical

Horizontal

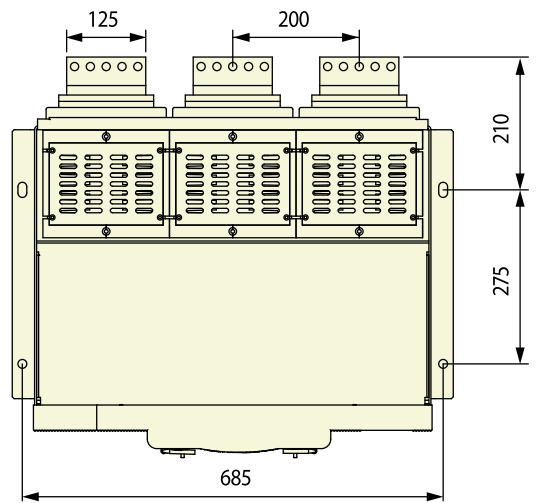
Side View



Bottom View



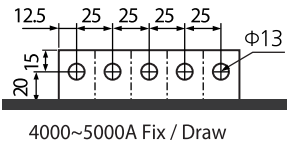
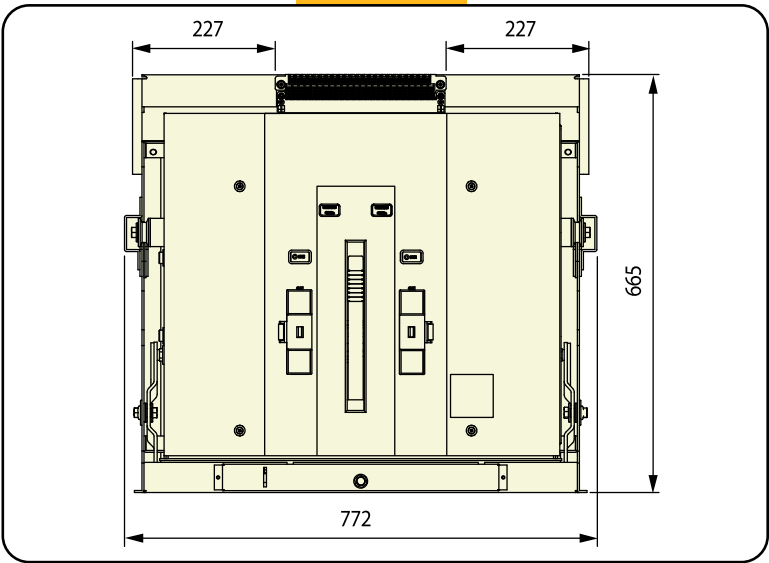
▲ Front



▲ Front

Dimensions  
4000~5000A 3P Drawable Type

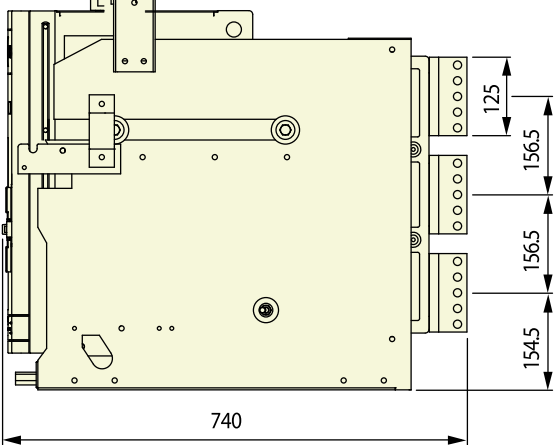
Front View



▲ BUS BAR Dimensions

Vertical

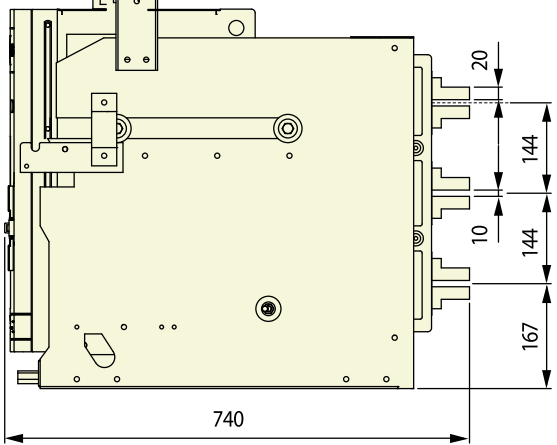
Front ▶



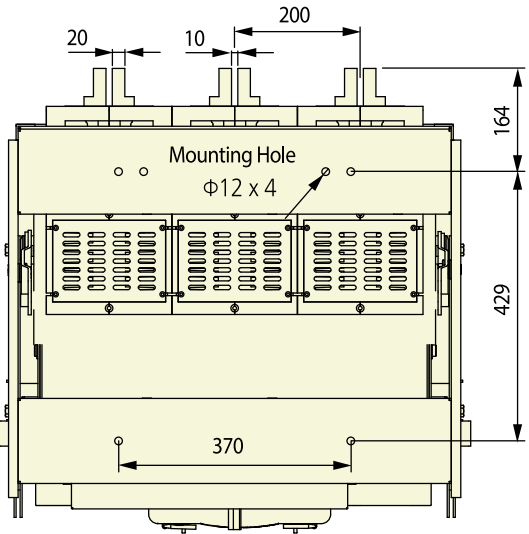
Side View

Horizontal

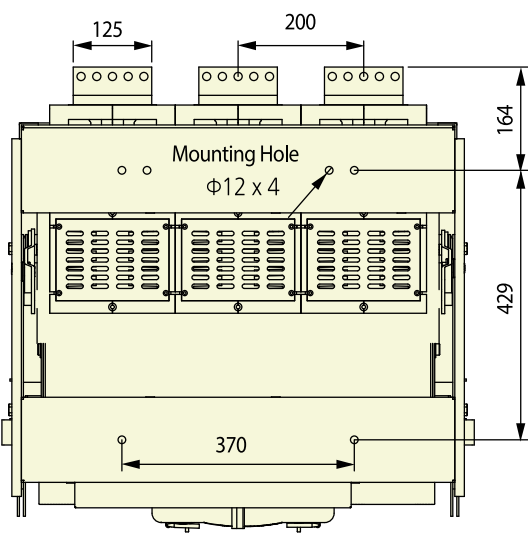
Front ▶



Bottom View



▲ Front

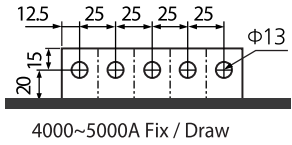
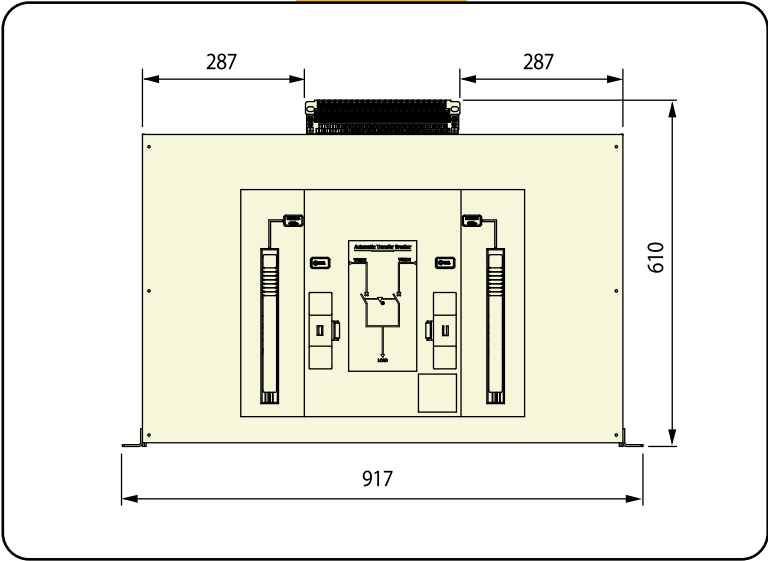


▲ Front



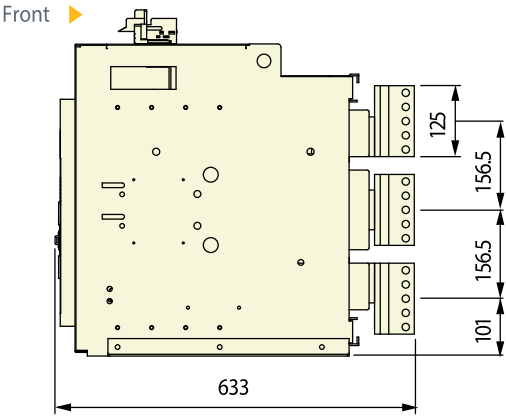
**Dimensions**  
**4000~5000A 4P Fixed Type**

Front View

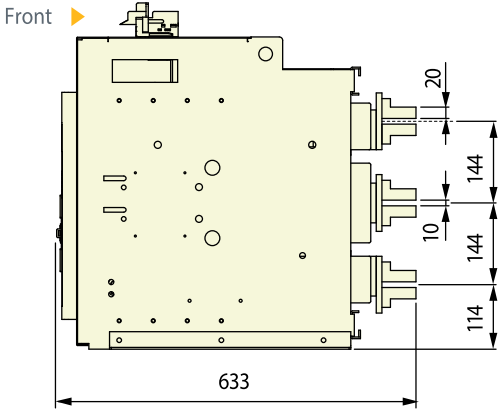


▲ BUS BAR Dimensions

Vertical

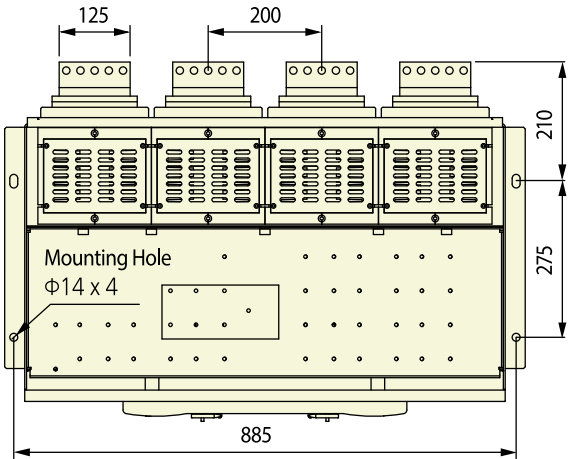
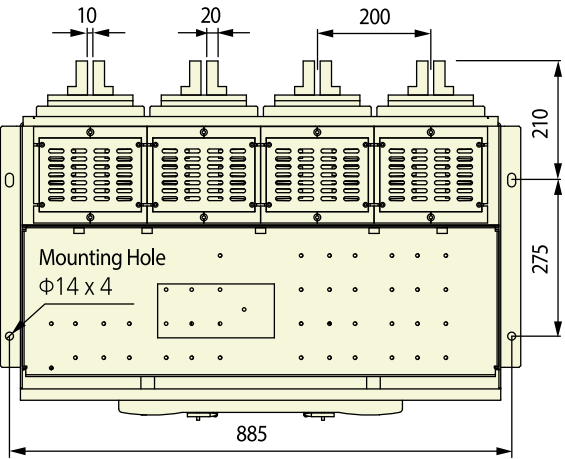


Horizontal



Side View

Bottom View

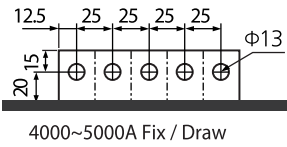
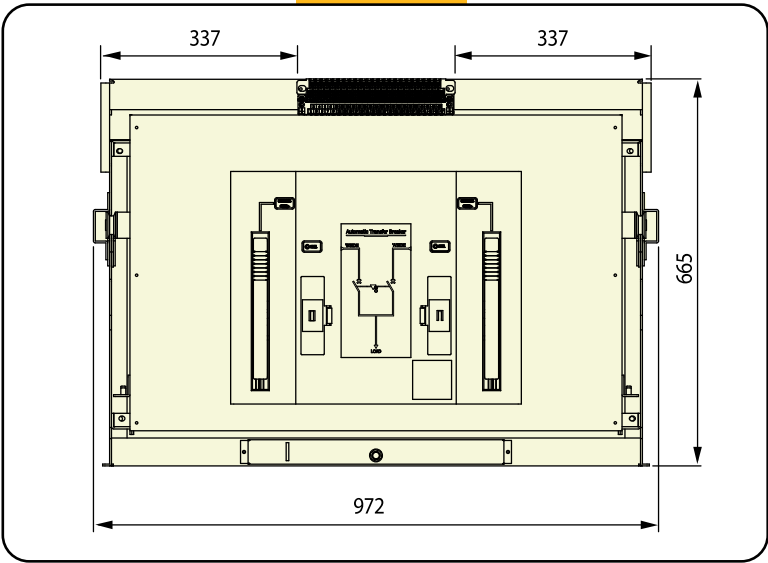


▲ Front

▲ Front

Dimensions  
4000~5000A 4P Drawable Type

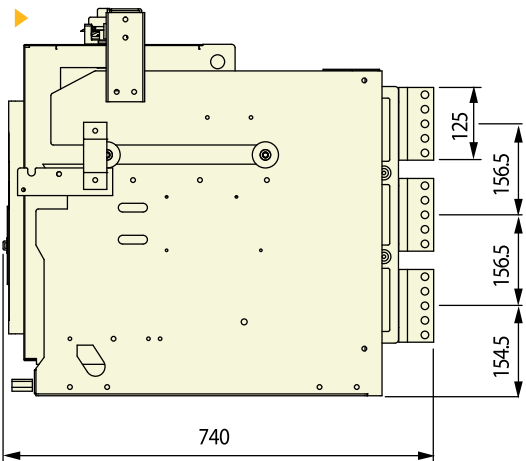
Front View



▲ BUS BAR Dimensions

Vertical

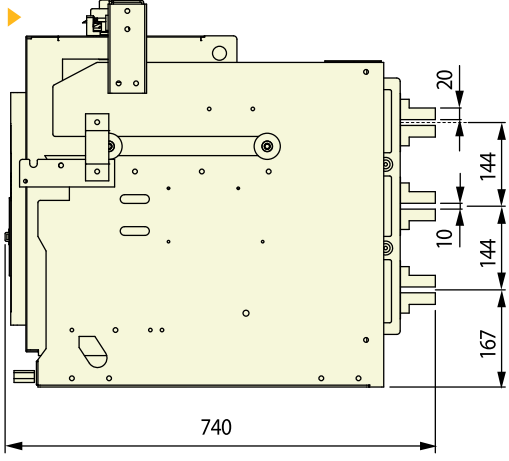
Front ▶



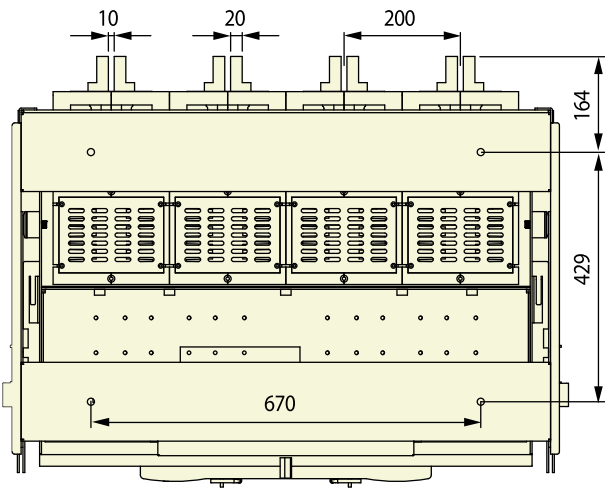
Side View

Horizontal

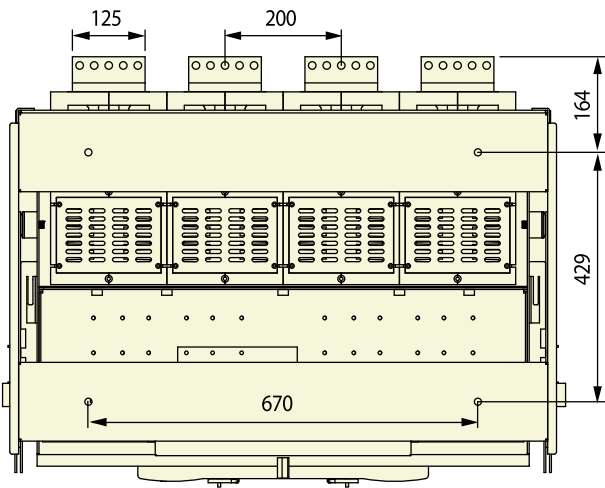
Front ▶



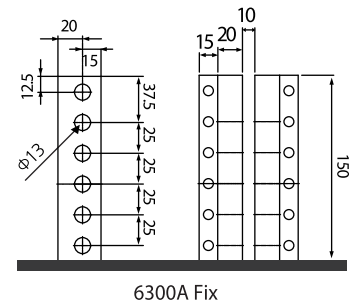
Bottom View



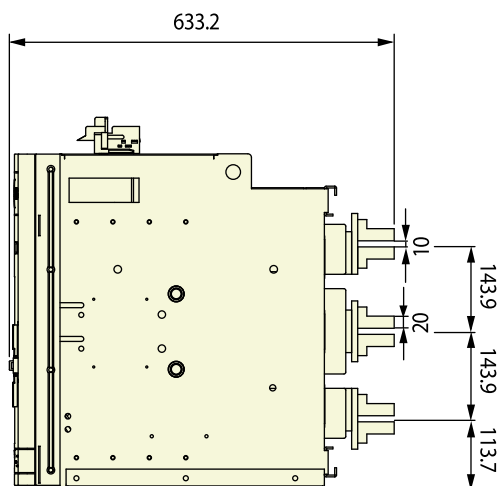
▲ Front



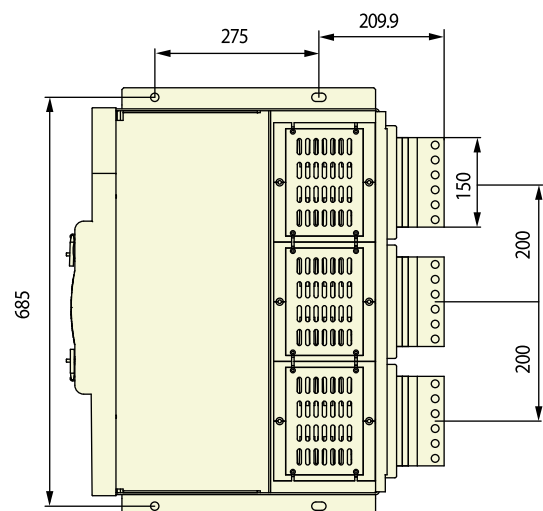
▲ Front



Front ▶

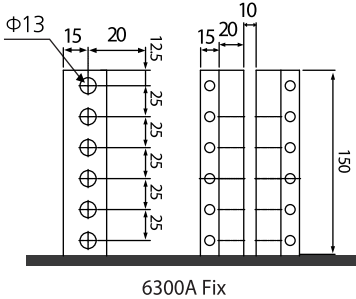
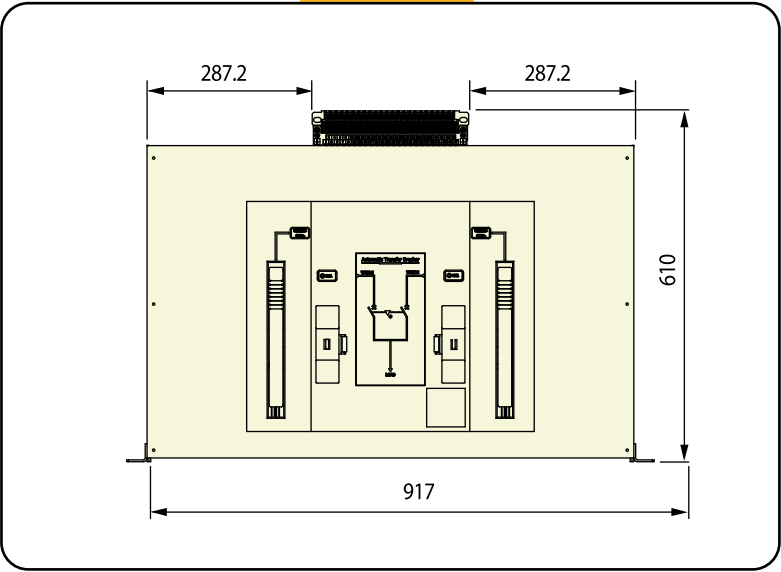


Front ▶



Dimensions  
6300A 4P Fixed Type

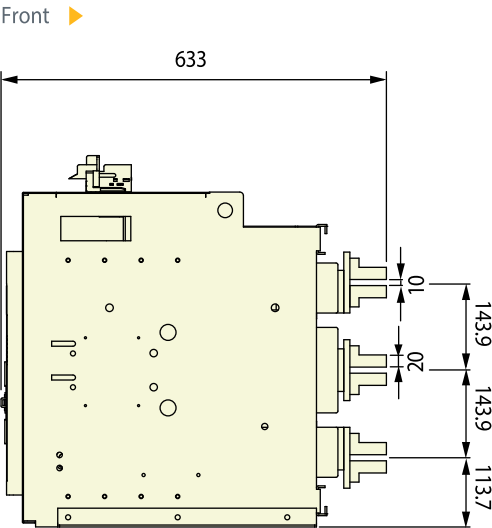
Front View



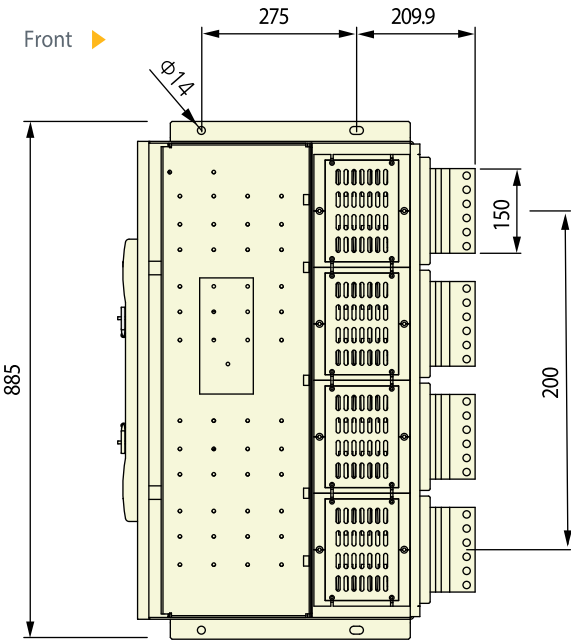
▲ BUS BAR Dimensions

Horizontal

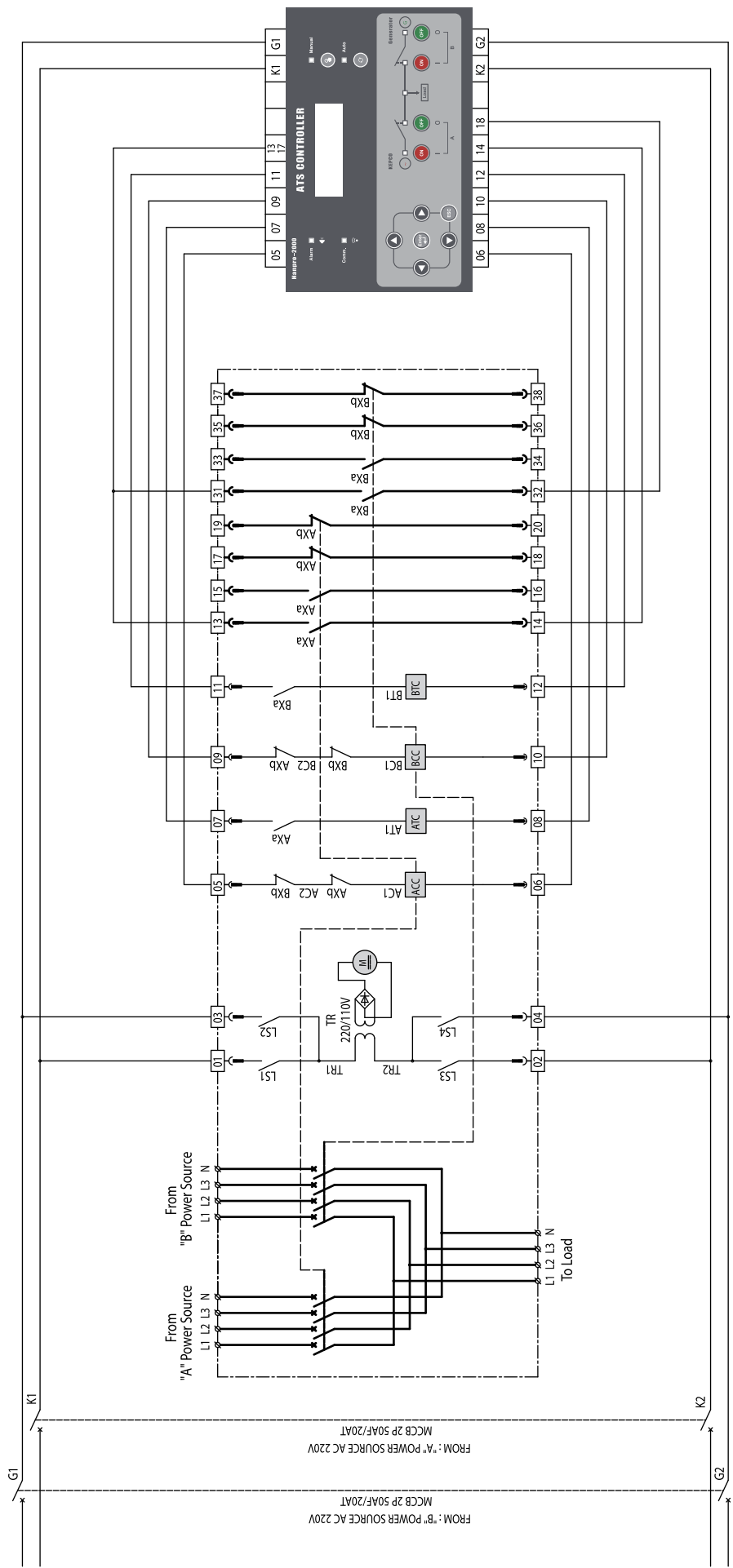
Side View



Bottom View

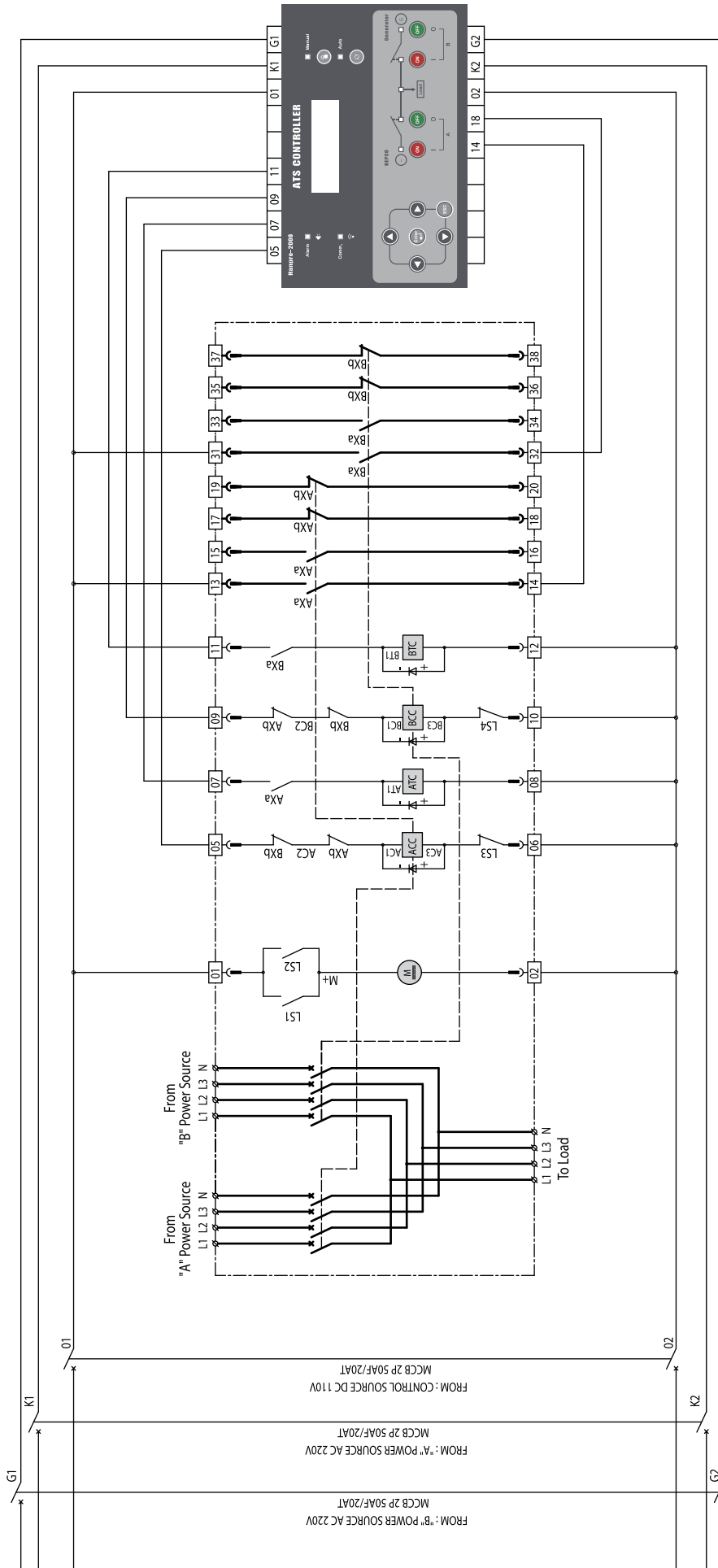


AC Control sequence



Part Name			Operation Terminal				
<u>M</u>	Charging Motor	ACC	"A"Side ClosingCoil	01, 02	"A"Side Charging Motor Power Terminal	09, 10	"B"Side Input Power Terminal
		ATC	"A"Side Trip Coil	03, 04	"B"Side Charging Motor Power Terminal	11, 12	"B"Side Trip Power Terminal
		BCC	"B"Side ClosingCoil	05, 06	"A"Side Input Power Terminal	13~20	"A"Side Auxiliary Contact Terminal
		BTC	"B"Side Trip Coil	07, 08	"A"Side Trip Power Terminal	31~38	"B"Side Auxiliary Contact Terminal

## DC Control sequence

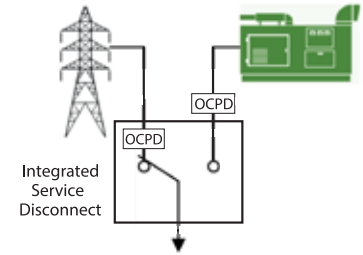


Part Name			Operation Terminal				
<u>M</u>	Charging Motor	ACC	"A"Side ClosingCoil	01, 02	Charging Motor Power Terminal	11, 12	"B"Side Trip Power Terminal
		ATC	"A"Side Trip Coil	05, 06	"A"Side Input Power Terminal	13~20	"A"Side Auxiliary Contact Terminal
		BCC	"B"Side ClosingCoil	07, 08	"A"Side Trip Power Terminal	31~38	"B"Side Auxiliary Contact Terminal
		BTC	"B"Side Trip Coil	09, 10	"B"Side Input Power Terminal		

## Application scope

Controller - Hanpro1000 is used to control Automatic Transfer Switches N type and TN type.

Controller - Hanpro1000 displays intuitively, is easy to use, and has an OFF mode when switching between two power sources to ensure safety for ATS.



## Salient features

- Off delay for Arc remove
- Malfunction prevent when transferring A to B (or B to A)
- Micro CPU type
- Operation Sequence : A ↔ OFF ↔ B / B ↔ OFF ↔ A

## Description

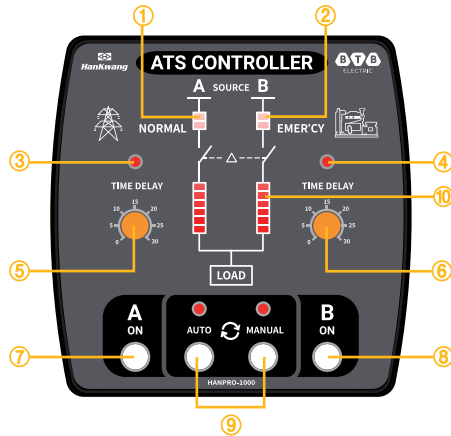
Model	Hanpro
System Voltage	AC220V
Rated frequency	50Hz, 60Hz
Transformer Burden	3VA[AC]
Insulation	1.5kV/1min
Ambient Temperature(°C)	-20~+60

## Image and structure



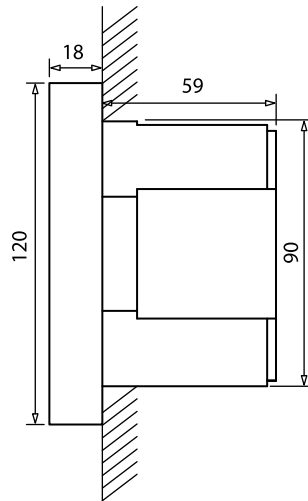


## Display and functions

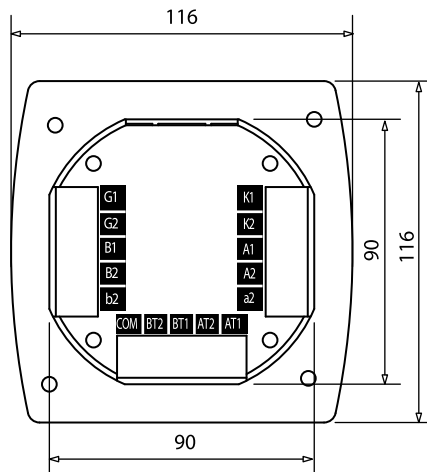


- ① A power source lamp
- ② B power source lamp
- ③ ④ Time delay display lamp
- ⑤ Normal power "ON" delay timer
- ⑥ Emergency power "ON" delay timer
- ⑦ A source "ON" push button
- ⑧ B source "ON" push button
- ⑨ Auto, Manual selection button.  
(Press and hold the manual button for more than 3 seconds to trip the switch.)
- ⑩ Status display flickering lamps

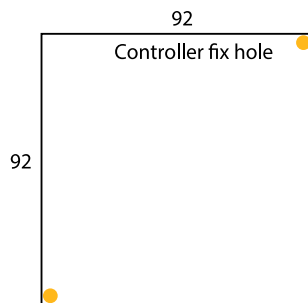
## Dimensions



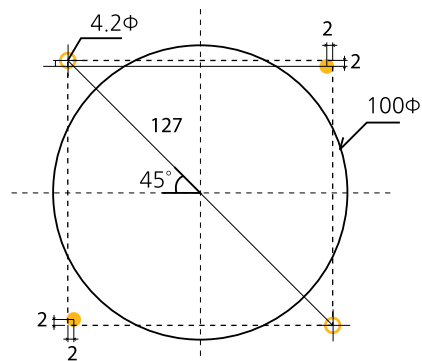
< Side View >



< Back View >



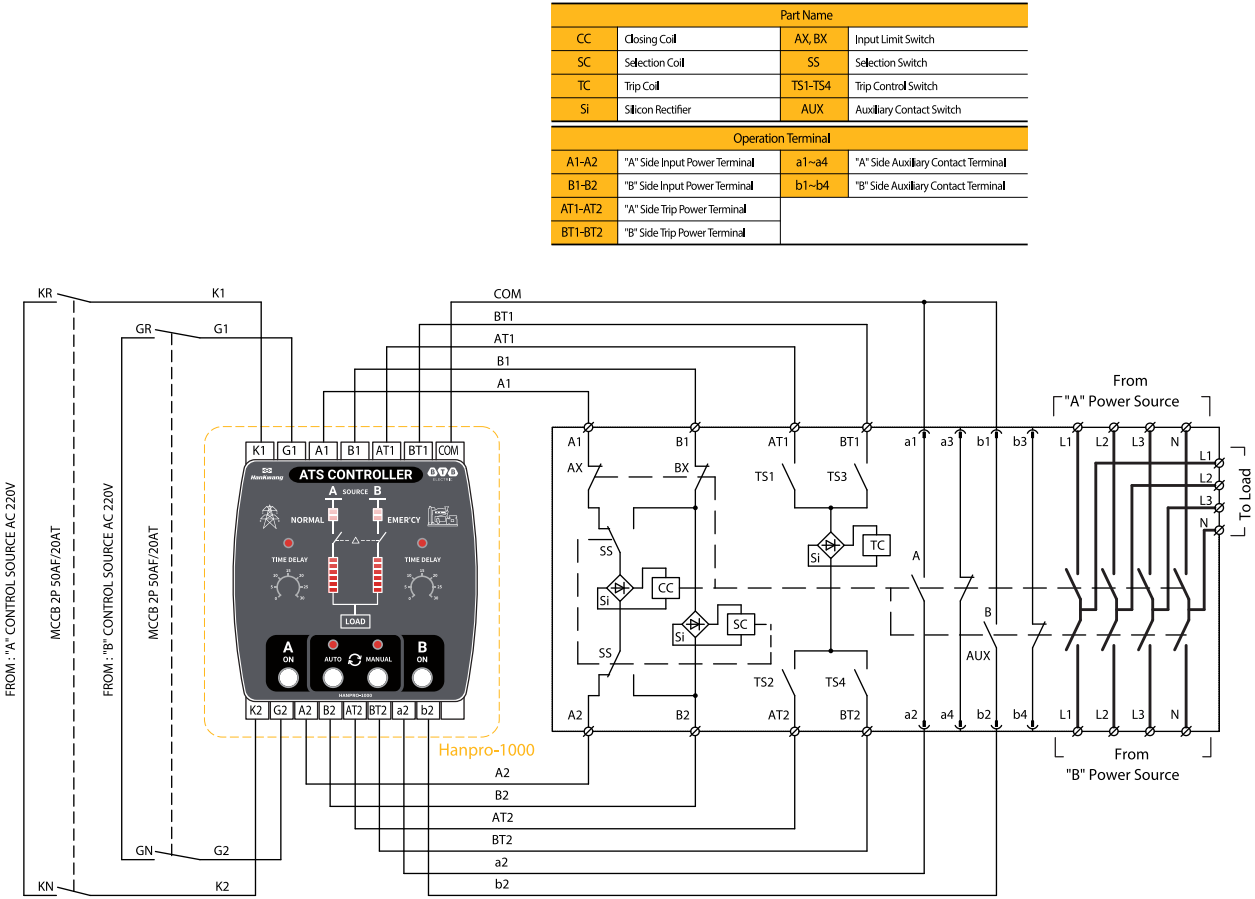
DIN 96



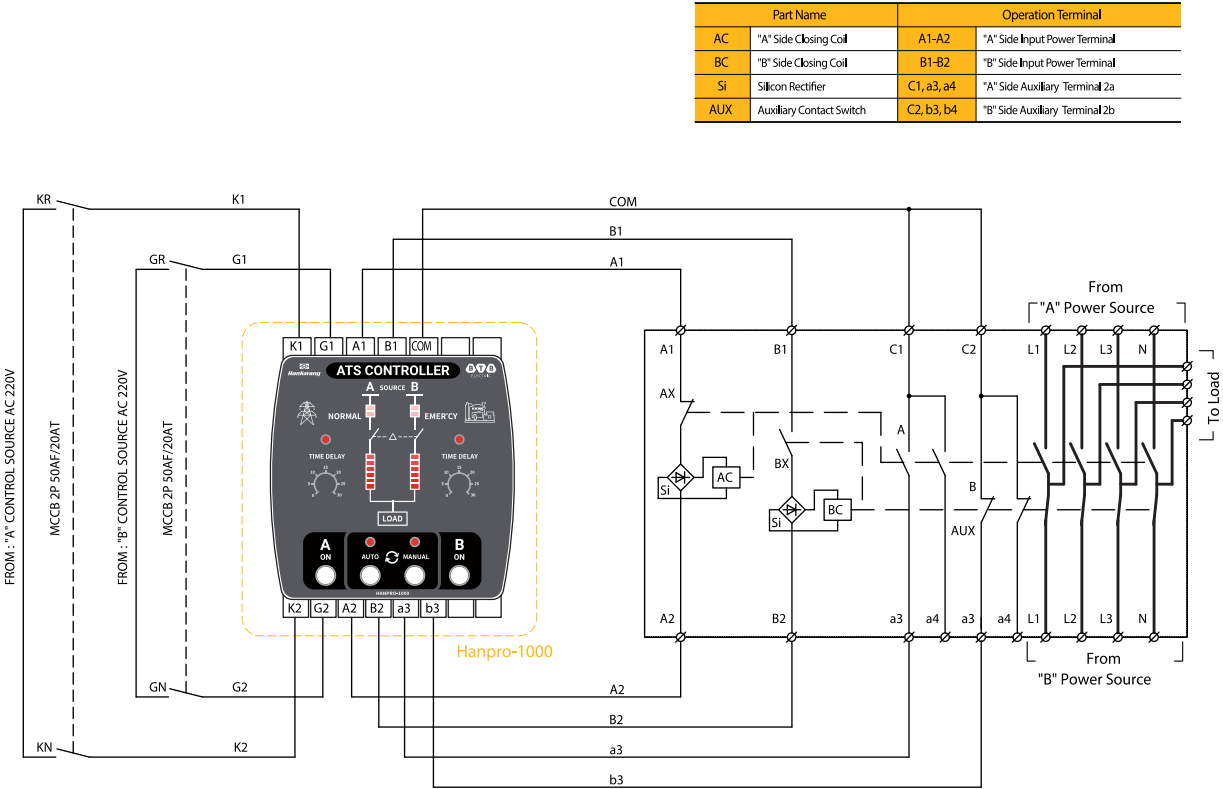
ANSI 4

< Cutting Size >

ATS TN type connecction diagram



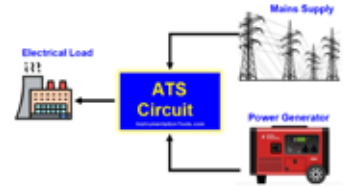
ATS N type connecction diagram



## Application scope

The ATbS C55 dual-power ATS controller is a comprehensive module for dual-power transfer. It comes equipped with configurable functions, automatic measurement capabilities, an LCD display, and digital communication.

By integrating digital intelligence and networking, it automates measurement and control processes, reducing the potential for human errors during operation. Designed for versatility, the ATbS C55 is compatible with non-breaking, one-breaking, and two-breaking switches.



## Salient features

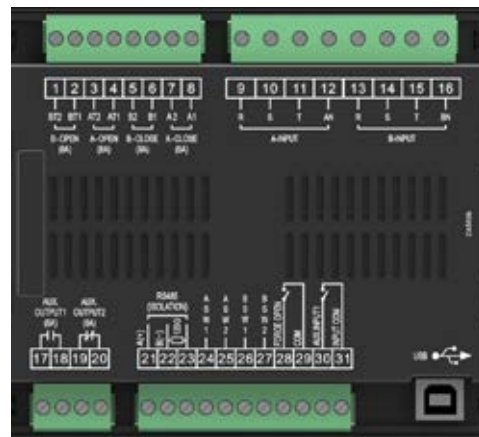
- System type can be set to: Mains - Generator, Generator - Mains, Mains - Mains
- Auto/Manual mode transfer function: in manual mode, user can control the switch to close or open
- Commissioning can be done on site manually to execute genset start/stop operations
- 2-way N wire isolated design
- AC supply power can be phase voltage (L, N), supply range: (170~277)V
- Suitable for various AC system types (3-phase 4-wire, single-phase 2-wire, and 2-phase 3-wire)
- Breaker close output can be set to pulse or continuous output
- Over/under voltage, over/under frequency, loss of phase reverse phase sequence function

## Image and structure



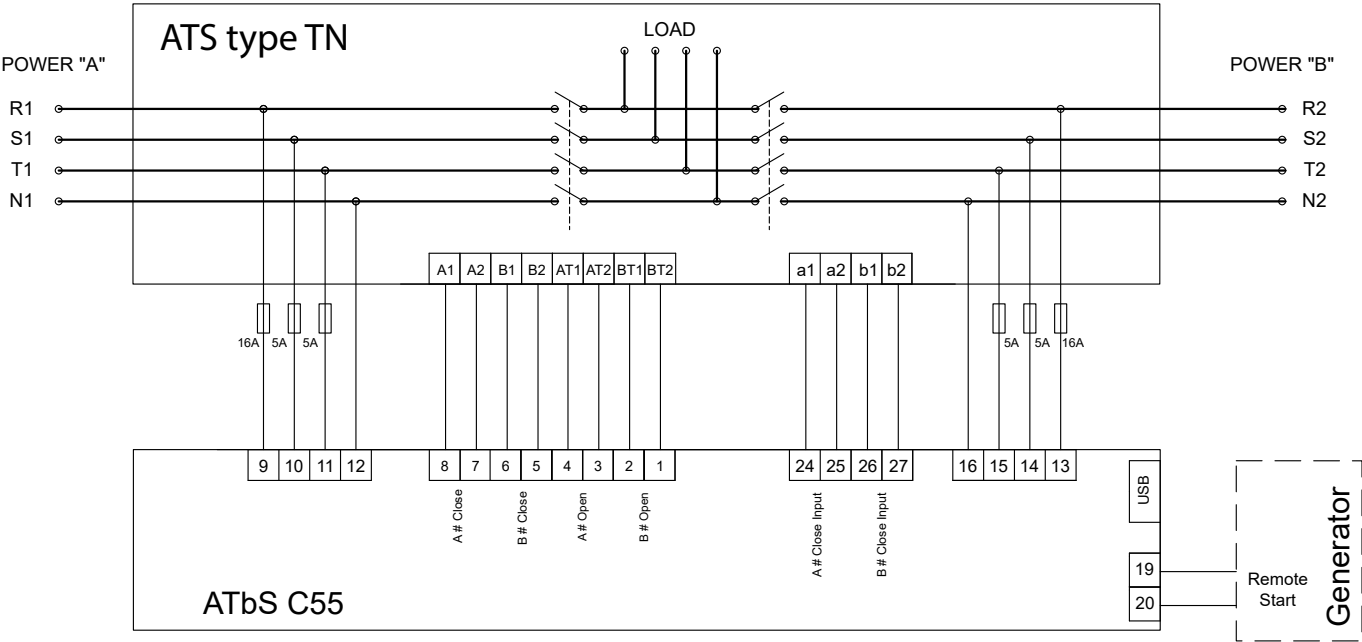
**Description**

Operating voltage	170~277V
AC voltage input	3P4W (170~277V ph-N) / 1P2W (170~277V)
Rated frequency	50/60Hz
Control	A<-> B or A <-> OFF <-> B or 2 ACB or 2 Contactor
System type set	A Mains B Gen / A Gen B Mains / A Mains B Mains
Switch type	Two Breaking / One Breaking / No Breaking
AC system	AC system: 3P4W / 3P3W / 2P3W / 1P2W
Auxiliary output setting	Yes
Auxiliary input setting	Yes
Function	Over/under voltage, over/under frequency, reverse phase sequence loss
Close / Open relay capacity	8A / 250VAC

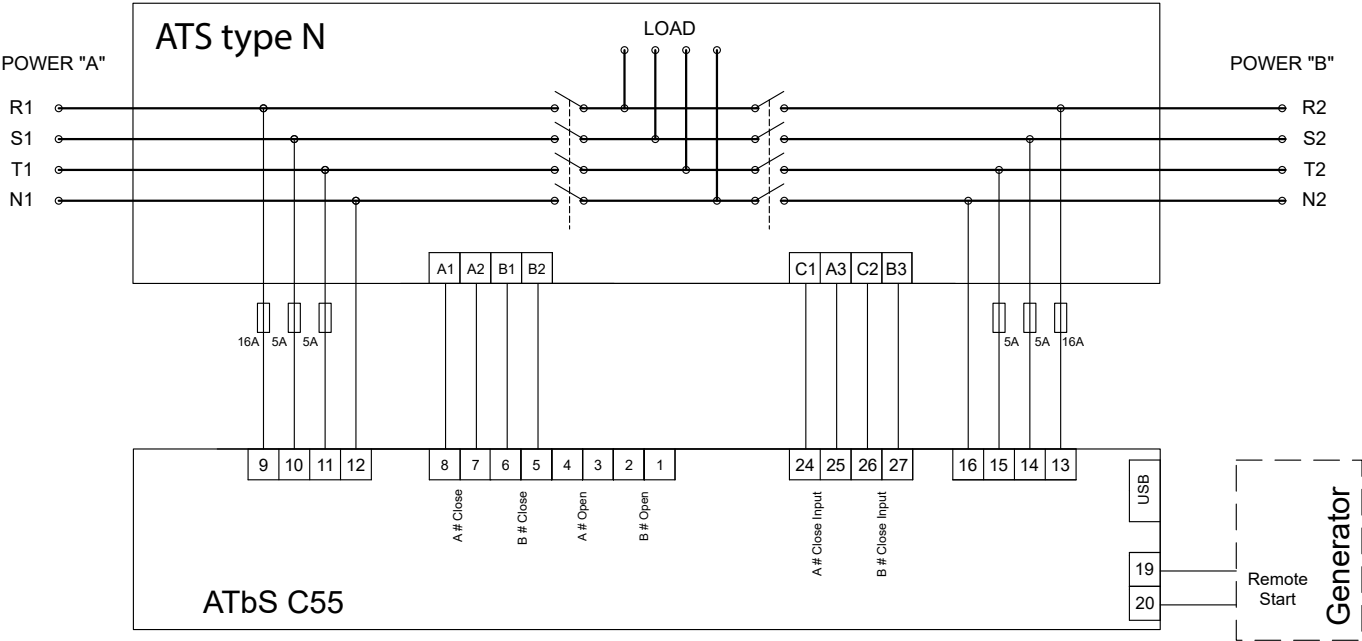
**Main function description**

Key	Function	Description
	Manual/Auto Key	Used to transfer between Manual or Auto mode.
	A Close Key	Active in manual mode; Press to close the A power switch and supply the load with A power.
	Open Key	Active in manual mode; Press to disconnect the load.
	B Close Key	Active in manual mode; Press to close the B power switch and supply the load with B power.
	Set/Confirm	In the main screen, press to enter the menu interface; After entering the menu interface, this key can be used to move the cursor and confirm the set information
	Down/Lamp Test Key	In the main screen, press to scroll down the screen display; In the menu interface, it can move down the cursor or decrease the value where the cursor is; Pressing longer initiates the lamp test.

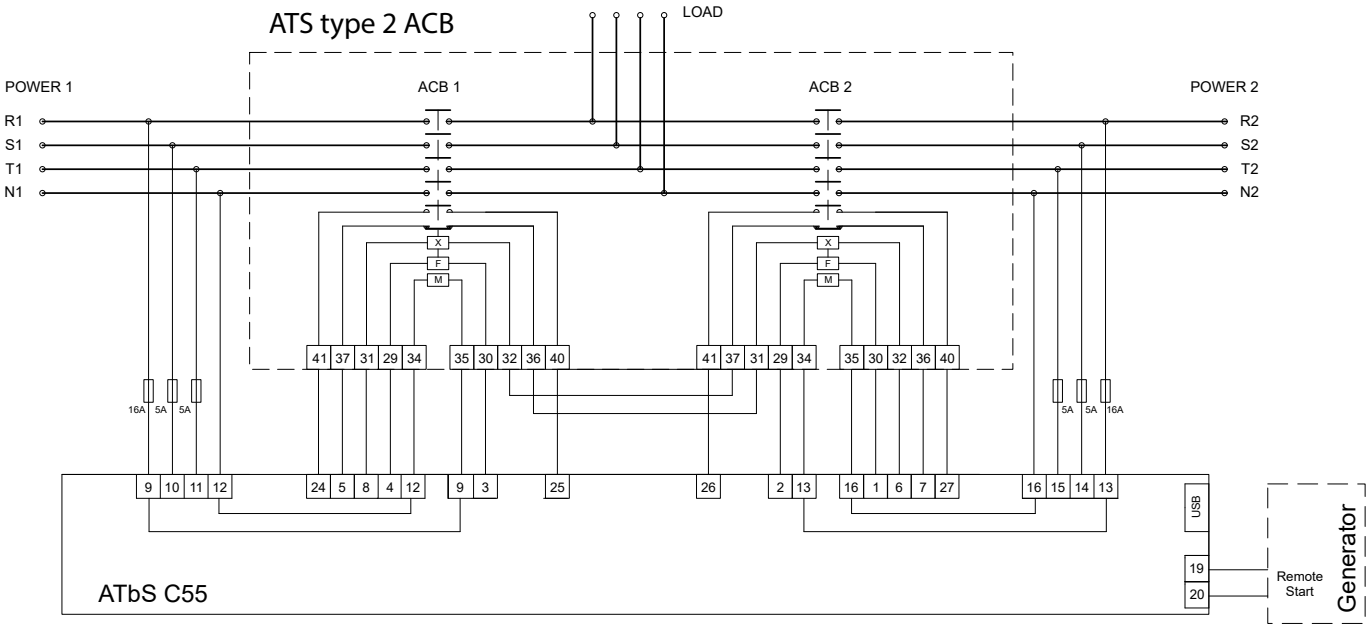
ATS TN type connecction diagram



ATS N type connecction diagram

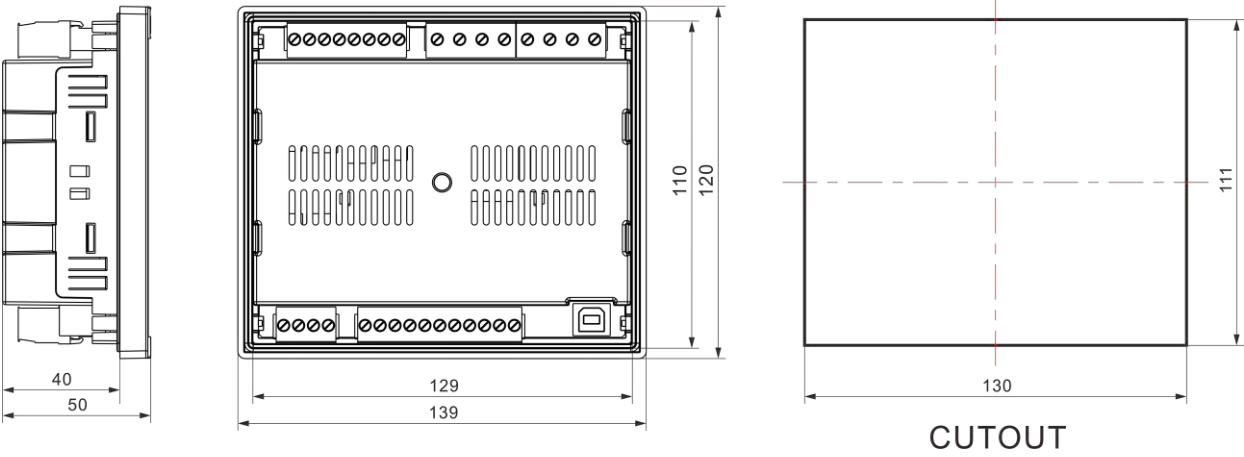


ATS connection diagram from 2ACB



M: Energy-saving motor; F: Open coil; X: Close coil.

Dimensions





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FOR LIFE**

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Web: [btb-electric.com](http://btb-electric.com)

