

New name of the Electrical-equipment

VIDER
Value Provider



Low-Voltage Equipment

Product Catalog

Automatic Transfer Switches



VITZRO EM

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Create Better Life

To the Light of Technology, To the Light of Value and To the Light of Reliability VITZRO EM, in company with the customers

VITZRO EM is a leading company in the electric equipment field, developing an advanced technology, to provide more satisfaction and more advantages for you. Based on a great, expert knowledge and technology on heavy electric equipment, electric power equipment and aerospace field, VITZRO EM creates a new value to propose a new standard that will change the future.

A Bright Future, VITZRO EM

A company that customers love more than ever for we give you a larger value.
Find a bigger world along with VITZRO EM!



A company that believes in faith and creativity as the optimal value

VITZRO EM has developed into a manufacturer of MV equipment, LV equipment, protective equipment and relays in the domestic electric equipment business with the company vision, 'Faith' and 'Creativity.' Based on the 'Faith', we think of our customers and with 'Creativity', we provide a new value. VITZRO EM will provide the new value for the convenience of customers. Basically, high-quality electric equipment and services will be provided and we will endeavor to meet the requirements of customers through our humane and sensible attitudes. Our company represents the electric equipment, yet we are the company of humans. Our company thinks of customers first by providing and enabling the use of convenient and stable equipment. VITZRO EM is the new value to pursue.

Technology Integrated Global Group

The History of VITZRO EM is the History of Technology.

VITZRO EM was founded in 1955, at the embryonic stage of domestic electric power industry and as we continue our tradition and history for over half a century, we constantly challenged and leapt forward, leading the future with the reputation of Korea's best technology company.

1955 Establishment for Gwang Myung electric machinery (at present VITZRO EM)

1999 Designated as Top 50 companies for competitive quality (at present VITZRO EM)

2006 Awarded prize for USD 10 million tower of export

2009 K-STAR Plasma facing component manufacture & assembly

1955~1988 __ History of Technology, Open Up New Vistas

Kwangmyung Electric Co. was founded in 1955 and started as a neutral electricity manufacturer in January, 1968 and moved the plant to Seongsu-dong in April, 1972. The company prepared a foundation as a technology company through a technical tie-up with AICHI Company and VSS & ATS of Japan in April, 1981 and a technical cooperation with MEIDENSHA Company of Japan and a contract was concluded on Korean retail stores (V.I) in December of the same year. VCB 7.2kV-Class Type Test (localization) was completed in July, 1982 and VCB 25.8kV-Class MCSG 2 Type and 7.2kV Type Tests were completed in September of the following year. We were designated as an electric parts and materials development company (Ministry of Commerce, Industry and Energy) for Type1 other than a vacuum contact in July, 1986 and established a technical cooperation with LINDSEY Company, USA on Polymer Concrete in December of the following year. In addition, 4 types of ACB were developed in June, 1988 and successfully localized them (KEMA Authentication, Netherlands).

1989~1999 __ Opportunity, Challenge and Remarkable Leap

The company name was changed to Kwangmyung Electric Generation Co. in June, 1989 and an affiliated technology lab was founded in December of the same year. We obtained KS marks for VCB 7.2kV, 8kV and 12.5kV in 1990 (Industrial Advancement Administration) and passed the development test for ACB 2 Types (KERI) in 1991 and for outdoor VCB and Gas Insulated Load Break Switch (PGS) (CESI, Italy) in 1993. We acquired the KS mark for Gas Insulated Load Break Switch (PGS for manufacturing) in 1995 and were awarded with the first Export Award (KEMC). We began exporting ATS to GENERAC.CORP, USA in 1995 and obtained KSA-QA ISO9001 certificate. We moved the office to Seoul in August, 1996 (Neung-dong, Gwangjin-gu, Seoul) and successfully developed Manual/ Motorized ASS 25.8kV 200A in December. Also, VCB development test was completed in 1997 (POWER TECH, CANADA), developed L/A 5kV in 1998 (Polymer Rubber Type), developed VCB 25.8kV, 31.5kV, 38kV and 40kV and acquired BVQ1 ISO 9001 certificate. A joint company with China was founded in 1998 and we were awarded IR52 Jang Young Shil Award in February of the following year (Maeil Business Newspaper) and selected as one of the 50 firms with qualitative competitiveness in 1999 which displayed our technical skills and quality that we strengthened for years.

2000~2016 __ VITZRO, Stepping Forward to the World

The company name was changed to VITZRO EM Co. in 2000. We laid a foundation for a rapid growth by developing VCB 12kV 1250A 25kV/15kV 1200A 25kV and registering in KOSDAQ stock market. A new plant was constructed in July of the following year (located in Seonggok-dong, Ansan, Gyeonggi Province) and we were designated as a promising small business (Gyeonggi Province Office), an electric parts and materials development company and INNO BIZ company (Joint Korean Economic Newspaper/Small and Medium Business Administration). We sped up on development of new technology and products and developed Cable Termination kits, Insulation Cover, Feed-type ASS (auto & manual), Outdoor VCB Bushing (Polymer Type) and Processed Gas Insulated Load Break Switch in 2002, VCB for nuclear power, ACB for nuclear power (508V 30/50/65kV), Current Limit Power Fuse and so forth in 2003. We were also awarded with various certificates and awards that prove our quality and technology such as a reliability certificate on Processed Gas Insulated Load Break Switch (PGS) in 2004 (R Mark, Korean Agency for Technology and Standards), a Certificate of Quality & Environment System and Aerospace Quality System (ISO 9001 & AS9100, ISO 14001) and a grand prize at the 1st Logo & Symbol Mark Contest (Ministry of Commerce, Industry and Energy Award). We obtained GD mark in 2005 and finally got a 1,000 ten million dollar-export prize in November, 2006, confirming the remarkable growth of VITZRO EM.

2017 __ VITZRO EM New Subsidiary

In July 2017, VITZRO EM starts its electric-power equipment business through physical division. Through product development using VI technology, we plans to grow into a only one of electrical equipment industry, VITZRO EM has a vision to become a global leader based on its technical superiority and business expertise.

Best products of electric equipment field including LV and HV from designing, manufacturing, installing and diagnosing the equipment to composing the power system, it is based on the accumulated, global standard technology and continuous R&D.

LV Equipment



Air Circuit Breakers

- ANSI C37.13/EED1200 Certification for Nuclear Power
- Adopted multifunction digital trip relay
- KS, KERI, IEC Certification
- Compact, lightweight
- Standard Specification: IEC 60947-2
- Implementing remote monitoring and control communication



Earth Leakage Circuit Breakers

- Standardized main sizes, easy manufacturing of panel
- Composed of max. 225AF, 2/3/4P
- MCCB / ELCB same frame
- Compatible installation of new and old products
- Adjustable sensitivity current, Max. 500mA



Auto Transfer Switches

- UL1008 Certification, KERI Type Test completed
- Maximum short circuit capacity in the country
- Optimal form that enables installation of 600mm-panel board for all types
- Ensure stability through separately sealed structure for each phase



Thermal Overload Relay

- Direct connection to a magnetic contactor
- Finger proof cover can be installed
- Separation of power/operation part



Molded Case Circuit Breakers

- UL Certification, Max. 800AF
- Max. 1200AF, fully equipped with all series 3/4P
- MCCB / ELCB same frame
- Realization of various auxiliary devices
- Compatible installation of new and old products



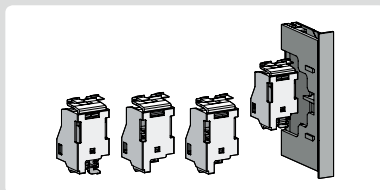
Miniature Circuit Breakers

- Minimum size, easy to apply panel board
- Increase of breaking capacity (5kA at AC 220V)
- Equipped with leakage display button



Magnetic Contact

- Improved Quality and Decreased Noise
- Convenient and Safe structure
- Enhanced safety by adopting Transparent Safety Cover



Auxiliaries

- Standardized auxiliaries, easier to apply
- AL, AX, UVT, Shunt - various auxiliaries

MV Equipment



Vacuum Circuit Breakers

- Rated breaking time of all types - 3 cycle
- Nuclear power certification ANSI C37.06 / EED1100
- Developed the first domestic Embedded VCB
- Passed KERI, KEMA, CESI development test
- Standard Specification: IEC 62271-100 [M2, E2, C2 Class]



Load Break Switch/Auto Section Switch

- Maximum fuse combined capacity in the country—Max. 100A
- LA & PF external combination structure
- Easy to design single-body panel through optimal form design
- Standard Specification: IEC 62271-105, IEC 60265-1, KEMC1126
- Compatible structure for LBS and ASS



Vacuum Contact Switches

- Rated breaking time 6.3kA(16.4kA peak)
- Minimize switch surge through optimal VI design
- Standard Specification: IEC 60470, IEC 60282-1
- Realization of mechanical interlock between VCSs or with other devices



Vacuum Interrupter/Embedded Pole

- Maintain high-vacuum state through automation process
- Compact and lightweight, durable design
- Collect and store all manufacturing information
- Excellent mechanical strength and degassing
- High-speed breaking and short arcing time



Main Circuit Breaker for Rolling Stock/ Vacuum Train Breaker (MCB/VTB)

- The sole main circuit breaker for rolling stock in the country
- Excellent seismic performance
- Detection of operating pressure and auto trip function
- Stable breaking feature (AC, DC line)



Gas Insulated Load Break Switch (GLBS)

- Division of lines and tapped line applied
- 3 position function (ON, OFF, Earth)
- Increase safety with hot-line display
- Certificate on reliability by KATS
- Low pressure display and lock function



Vacuum Transfer Switches

- The one and only Medium Voltage Transfer Switch in Korea
- Electrical & Mechanical Interlock available.
- Economical optimization [Two sides of panels and two pieces of VCBs are not necessary.]
- Minimized outside dimension which can be possible with multistage loading.



Current Limit Power Fuse

- Optimal current limit feature
- Protection through full back-up with high breaking capacity
- Maximum striker motional energy in the country
- Simplified with 4 types of fuse forms
- Protect transformers, motors, Capacitor and wires

IED & Controller



Digital Protection Relay VIPAM

- System protection required, relay element provided
- Store history of faults (trouble) and wave form
- Provide analysis function through PC interlocking
- RS422/485 communication support
- English/Korean language support



Digital Control Meter VIMAC, VIDER

- Power quality analysis and breaker control
- Automatic power factor control (APFC), harmonic analysis

Protective Device



Lightning Arrester/Surge Absorber (LA/SA)

- Optimal motion of Gapless type
- Scatter prevention when explodes using a polymer LA
- Can be used outdoors using a polysil SA
- Fire prevention due to nonflammable material



Surge Protective Device

- IEC and KS standard certification
- Built-in fuse with disconnecting device function
- Excellent TOV failure feature
- Operation status display lamp (LED Lamp)
- Easy to install using a Plug In type

VITZRO EM

We Create the Next Value

By the light of technology, value and confidence,
Together with customers, we are VITZRO EM

Leading the pleasant and affluent field of electric power equipment with state-of-the-art technology, VITZRO EM is creating new value in order to offer greater customer satisfaction with greater business value as well as present new standards, while making a difference for a better future, based on thorough knowledge and skills in the fields of heavy electric equipment, power electronics and aerospace.

VITZRO EM



A6 Automatic Transfer Switches

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Automatic Transfer Switches

100~200A

These VITZRO EM ATS units combine new IT technologies to design and produce the optimal solution for any customer environment. This premium offering is complete with user-centered protection to satisfy a wide range of customer needs and ensure maximum safety.



Saving Power

- Low operating current instantaneous excitation system.

Safety Design

- Contact is maintained by an anti-vibration configuration molded into the poles

2-Coil System

- For reliable operation

Miniature Structure

- These compact units can be built into portable generators or UPS, and is ideal for single-phase load less than 200A.

Applied Standard

- IEC 60947-6/UL1008

Internal Accessories

Automatic Transfer Switches 100~3000A

Innovative convenience and ergonomics are built into VITZRO EM ATS units. These ATS units are premium products that deliver ideal solutions for a wide range of customer applications with world-class reliability.

Certificate & Approval

- VITZRO EM ATS designs are based on years of experience with switching, operational, and insulation design and technology.
- It is a product with the largest short circuit capacity and applied with the international standards IEC60947-3^{Note1} (Transfer Switching Equipment) and IEC60947-6-1 (Transfer Switching Equipment).
- It is an automatic transfer switch equipped with the breaking capacity and its reliability has improved (Obtained a short circuit certificate through KERI Type Test).
- It has two way breaking capacity.

It is possible to install a 1000 mm panel board for all types

- It can be built inside the movable generator or UPS since it is in a miniature structure.
- It is possible to supply a stable power by composing a separate system.

The transparent terminal cover and insulation molding and protects against entry

- Transparent insulation cover for access terminals enhances insulation performance the of foreign material and improving operator safety.
- A sealed structure with fully molded insulation to maximizes the safety of the operator and lifespan of the device.
- Transparent terminal cover adoption makes it easy to identify terminal connections and makes it easy to work with terminal covers when carrying out a connection.

* ^{Note1} IEC60947-3 : Switches, disconnectors, Switch-disconnectors and Fuse-combination units.



It is easy to carry out maintenance and is designed for safety

- It is easy to attach/detach the insulation cover so that it is easy to determine contact or terminal wear.
- It is easy to check the switching performance and main contact state because of a simple, removable Arc Shute structure.
- The operational mechanism is protected by a steel cover and the solenoid can be checked by simple.

Each phase has been individually sealed for enhanced prevention and safety

- Individual moldings and closures on each of the phase improve blocking performance and increase lifespan.
- Short arc time and low contact consumption during opening and closing causes reduce wear.
- The use of separate springs for the opening of contacts ensures consistent and reliable shutdown performance regardless of operating voltage.

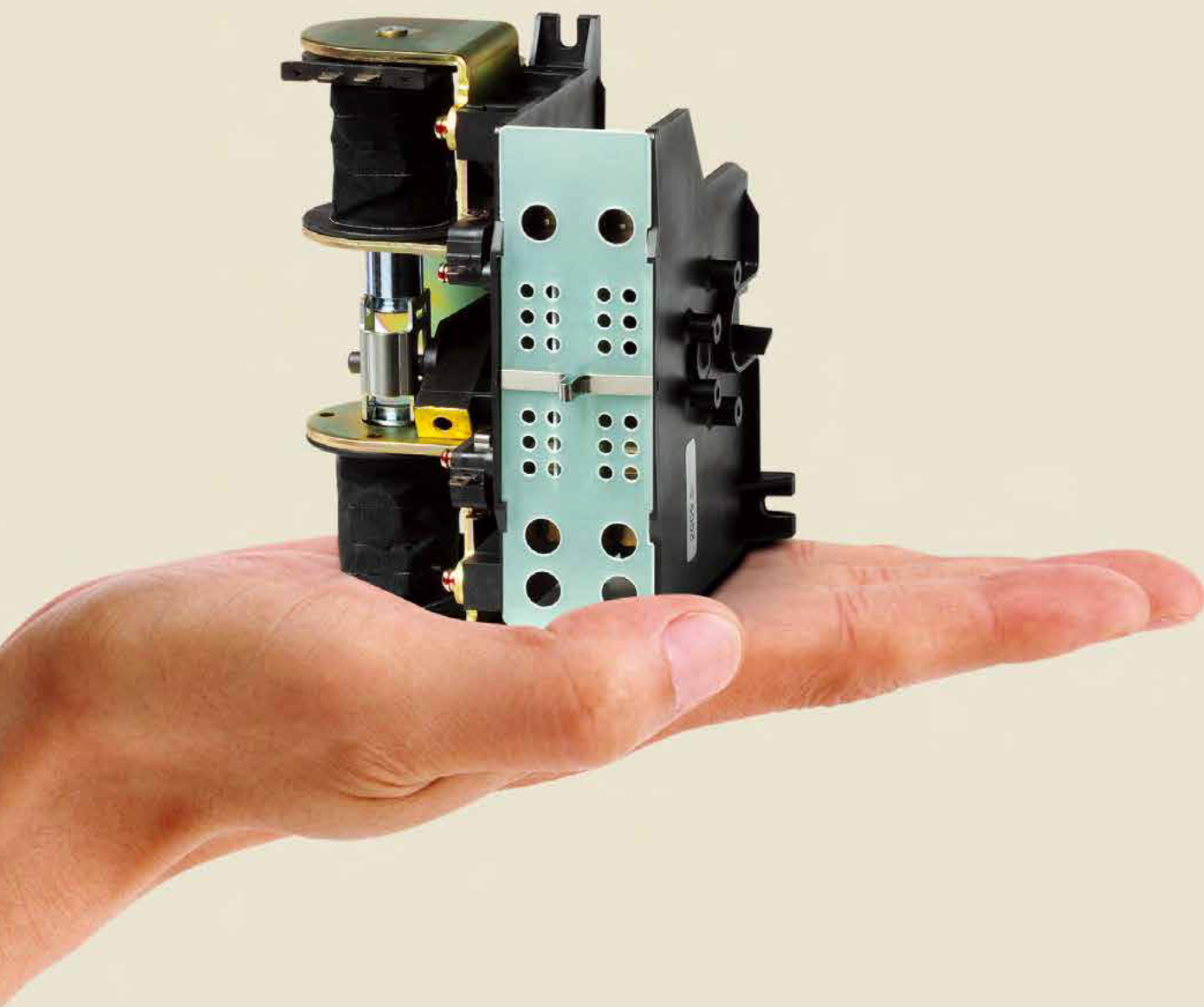
Improved safety for users

- The protection and breaking capacity of main points have been enhanced by the design of the trip system after the lines are inserted at the auxiliary contacts Improved safety for users.
- Excellent opening and closing switching design reduces arcing enhancing product life.

Compact design for customers makes it convenient

Ratings

VITZRO EM has made extensive research and development efforts to enhance product designs in order to offer you the finest ATS line in the world.



Miniature ATS HS Types

2P

100A

200A



Features

Saving power

It is in an instantaneous excitation mode with low operating current (1.6A in case of AC 220V operation)

Safe Design

The breaking part is molded for a dust-proof so the operational cycle of the contact part is semi-permanent.

2-Coil Mode

It adopted a simple operation mode using 2 coils

Miniature

It can be built inside the portable generator or UPS

Low Cost

It is a miniature type and it is optimal for a single phase with less than 200A (non-inductive)

Applied Standard

IEC 60947-6-1 / UL1008

Type		21HS	22HS
Rated Current(In)	A	100	200
Rated Voltage(Ue)	V	AC220	AC220
Rated Insulation Voltage(Ui)	V	AC300	AC300
Rated Impulse Voltage(Uimp)	kV	4	4
Poles	P	2	2
Throw	T	Double Throw	Double Throw
Connection Type	Front	●	●
	Back	-	-
Performance			
Short Time Current(1s) I _{cw}	kA	5	10
Short Circuit Peak Current I _{cm}	kA	5	10
With Specific Circuit Breaker	kA	14	25
Fuse Mounting	kA	200	200
Switch Capacityapacity ^{Note1)}	Class	AC-33B	AC-33B
Endurance	Electrical	Cycles	5,000
	Mechanical	Cycles	10,000
Transfer Sequence		A ↔ B	A ↔ B
Operation Time	Opening	msec	≤30
	Switching	msec	≤60
Conditions of Uninterruptible Transfer			
Switching	AC/DC 110V	A	-
	AC 220V	A	5
Dimensions & Weights			
	H	165	176
	W	127	151
	D	100	121
Weight	kg	1.1	2.2
Precautions		1) Transfer time is 0.3sec or less. Make sure a full operation is possible with an operation command of 0.5sec or more. 2) When A-side and B-side operation command is done simultaneously, it may lead to coil burning. 3) In case of an operation relay, select a sufficient contact capacity that exceeds the operating current.	

* Note1) Switching Capacity : AC-33B :

Overcurrent Switching Performance (Closing $10 \times I_e$, Breaking $10 \times I_e$, $\cos\phi = 0.35$),
 Rated Load Switching Performance (Closing $1 \times I_e$, Breaking $1 \times I_e$, $\cos\phi = 0.8$)

Ratings

Standard ATS WN Types

100A ~ 3000A



Model with improved insulated feature and safety.
Neutral Point Mode added.

A ↔ Neutral(off) ↔ B

Features

Full insulated feature

The breaking part is fully enclosed in a mold structure to completely prevent electrical accidents due to the insulation degradation resulting from an electric shock due to a physical contact or attachment of dust or foreign substances when used for a long time.

Safe Conduction

All phases are designed to have a certain contact pressure which allows them to maintain a safe conducting performance. It is protected by Latch device so the intensity of the over-current is high in case of a short circuit.

Sophisticated Design

Each phase is fully insulated and is in an independent 1-phase structure. According to the convenience of users, the conduction parts of 3-phase and 4-phase can be combined depending on the capacity and the number of phases.

One-coil Mode

It is a Compact Type where closing of commercial power and reserved power is possible with 1 closing coil.

Safe Open Feature

By adopting a unique-structured arc shute, the operational cycle is semi-permanent because the arc breaking time is short and the contact consumption is little. A stable breaking can always be implemented regardless of the operating voltage by applying a trip operation that uses a breaking spring.

Neutral Point Mode

After checking the stability and safety of the circuit, Neutral Point ("OFF" state) is possible due to the trip. That is, operation by A → off → B, B → off → A as well as A → off → A, B → off → B and instantaneous transfer are possible.

Saving Power

It is in an instantaneous excitation mode with very little by Latch device so the intensity of the over-current is high in case of a short circuit. By adopting a unique-structured arc shute, the operational cycle is semi-permanent because the arc breaking time is short and the contact consumption is little.

Breaking Feature

A stable breaking can always be implemented regardless of the operating voltage by applying a trip operation that uses a breaking spring.

Type			B60010WN			B60020WN			B60040WN			
			61WN			62WN			64WN			
Rated Current(In)		A	100			200			400			
Rated Voltage(Ue)		V	AC600			AC600			AC600			
Rated Insulation Voltage(Ui)		V	AC800			AC800			AC800			
Rated Impulse Voltage(Uimp)		kV	8			8			8			
Pole		P	2, 3, 4			2, 3, 4			2, 3, 4			
Throw		T	Double Throw			Double Throw			Double Throw			
Connection Type	Front		●			●			●			
	Back		●			●			●			
Performance												
Short Time Current(1s) I _{cw}		kA	5			10			12			
Short Circuit Peak Current I _{cm}		kA	5			10			12			
With Specific Circuit Breaker		kA	14			25			35			
Fuse Mounting		kA	200			200			200			
Utilisation Category ^{Note1)}		Class	AC-33B			AC-33B			AC-33B			
Endurance	Electrical	Cycles	5,000			5,000			5,000			
	Mechanical	Cycles	10,000			10,000			10,000			
Transfer Sequence			A ↔ B, A ↔ Neutral(off) ↔ B									
Operation Time	Closing	msec	≤60			≤60			≤60			
	Trip	msec	≤20			≤20			≤20			
Conditions of Uninterruptible Transfer			2P	3P	4P	2P	3P	4P	2P	3P	4P	
Closing	AC/DC 110V	A	7	7	7	7	7	7	8	8	8	
	AC 220V	A	3.5	3.5	3.5	3.5	3.5	3.5	4	4	4	
Trip ^{Note2)}	AC/DC 110V	A	3			3			3			
	AC 220V	A	1.5			1.5			1.5			
Dimensions & Weights												
Front Size (mm)		H	201.5	201.5	201.5	201.5	201.5	201.5	254	254	254	
		W	215	251	287	215	251	287	245	296	347	
		D	118	118	118	118	118	118	119	119	119	
Back Size (mm)		H	174	174	174	174	174	174	208	208	208	
		W	215	251	287	215	251	287	245	296	347	
		D	143	143	143	143	143	143	163	163	163	
Weight	Front	kg	4.5	6	8	4.5	6	8	7.5	9	10.5	
	Back	kg	4.5	6	8	4.5	6	8	6	8	10	
Additional Product Information												
Circuit diagram			A6-19			A6-19			A6-19			
Time chart			A6-18			A6-18			A6-18			
Drawing			A6-24			A6-24			46-25			
Precautions			A6-14			A6-14			A6-14			

* **Note1)** Utilisation Category : AC-33B :

Overcurrent Switching Performance [Closing 10×I_e, Breaking 10×I_e, Cosφ = 0.35],

Rated Load Switching Performance [Closing 1×I_e, Breaking 1×I_e, Cosφ = 0.8]

* **Note2)** Trip : The switch in the circuit is opened to the neutral position (OFF) at Power A or B.

* **Note3)**

* **Note4)**

	B60063WN		B60080WN		B60100WN	
	66WN		68WN		610WN	
	630		800		1000	
	AC600		AC600		AC600	
	AC800		AC800		AC800	
	8		8		8	
	3, 4		3, 4		3, 4	
	Double Throw		Double Throw		Double Throw	
	•		•		•	
	•		•		•	
	15		20		20	
	15		20		20	
	35		42		42	
	200		200		200	
	AC-33B		AC-33B		AC-33B	
	5,000		5,000		5,000	
	10,000		10,000		10,000	
	≤100		≤100		≤100	
	≤30		≤30		≤30	
	3P	4P	3P	4P	3P	4P
	8	10	10	10	10	10
	4	5	5	5	5	5
	4		4		4	
	2		2		2	
	278	278	298	298	298	298
	340	400	400	480	400	480
	143	143	143	143	143	143
	248	248	267	267	267	267
	340	400	400	480	400	480
	176	176	178	178	178	178
	15	18	20	24	21	25
	14	17	19	23	20	24
	A6-19		A6-19		A6-19	
	A6-18		A6-18		A6-18	
	A6-26		A6-26		A6-26	
	A6-14		A6-14		A6-14	

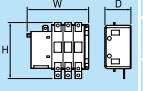

Ratings

Standard ATS WN Types - C Type

1250A ~ 3200A



A ↔ Neutral(off) ↔ B

Type			C60125WN		C60160WN	
Rated Current (In)	A		1250 ^{Note3)}		1600	
Rated Voltage (Ue)	V		AC600		AC600	
Rated Insulation Voltage (Ui)	V		AC800		AC800	
Rated Impulse Voltage (Uimp)	kV		8		8	
Pole	P		3, 4		3, 4	
Throw	T		Double Throw		Double Throw	
Connection Type	Front		-		-	
	Back		●		●	
Performance						
Short Time Current(0.05sec) Icw	kA		25		32	
Short Circuit Peak Current Icm	kA		25		32	
With Specific Circuit Breaker	kA		50		50	
Fuse Mounting	kA		200		200	
Utilisation Category ^{Note1)}	Class		AC-33B		AC-33B	
Endurance	Electrical	Cycle	5,000		5,000	
	Mechanical	Cycle	10,000		10,000	
Transfer Sequence			A ↔ B , A ↔ Neutral(off) ↔ B			
Operation Time	closing	msec	≤ 150		≤ 150	
	trip	msec	≤ 30		≤ 30	
Conditions of Uninterruptible Transfer			3P	4P	3P	4P
Closing	DC 110V	A	11	11	11	11
	AC 220V	A	6	6	6	6
Trip ^{note2)}	DC 110V	A	4		4	
	AC 220V	A	2		2	
Dimensions & Weights						
Front Size (mm)		H	-	-	-	-
		W	-	-	-	-
		D	-	-	-	-
Back Size (mm)		H	485	485	485	485
		W	329	412	329	412
		D	416	416	416	416
Weight	Front	Kg	-	-	-	-
	Back	Kg	50	60	55	65
Additional Product Information						
Circuit diagram						
Time chart						
Drawing						
Precautions						

	C60200WN		C60250WN		C60320WN	
	2000		2500		3200 ^{#3)}	
	AC600		AC600		AC600	
	AC800		AC800		AC800	
	8		8		8	
	3, 4		3, 4		3, 4	
	Double Throw		Double Throw		Double Throw	
	-		-		-	
	●		●		●	
	40		50		50	
	40		50		50	
	65		85		85	
	200		200		200	
	AC-33B		AC-33B		AC-33B	
	3,000		3,000		3,000	
	5,000		5,000		5,000	
	A ↔ B , A ↔ Neutral(off) ↔ B					
	≤ 180		≤ 180		≤ 180	
	≤35		≤35		≤35	
	3P	4P	3P	4P	3P	4P
	11	14	-	-	-	-
	6	7	15	15	15	15
	4		-		-	
	2		2		2	
	-	-	-	-	-	-
	-	-	-	-	-	-
	-	-	-	-	-	-
	485	485	485	485	485	485
	404	512	480.5	614	480.5	614
	416	416	480	480	480	480
	-	-	-	-	-	-
	65	85	92.5	119	92.5	119

Ratings

Economic Type ATS W, WP Types

100A ~ 400A



W type Standard Type A ↔ B

WP type Pause Function
Additional Type A ↔ Pause ↔ B

Features

Safe Design

It provides a safe operation by adopting a dust-proof mold structure at the breaking part.

For both AC/DC

The operating circuit can use both AC/DC.

One Coil Instantaneous Excitation Mode

- It is a power saving structure with an instantaneous excitation mode in one coil.
- The voltage of operating coil is both AC110/220V [※ Refer to the instruction].

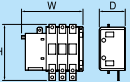
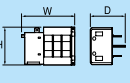
It is an instantaneous operation type where the operation time cannot be adjusted. But, in case of WP type, a Neutral position is added between A-power source and B-power source which enables it to provide a temporary pause function (pause in OFF state) within 30 seconds that is not connected to both A and B power sources in case of transfer operation.

[Ex] When transferring from A-power to B-power

- ① A Opening → ② Pause for 3-30 seconds →
- ③ B Closing

This function is to prevent a short-circuit of load part and power source part by transferring to the other power after a residual voltage is extinct if the existing load is the same as the motor load that generates much residual voltage.

If a pause of more than 30 seconds or OFF status should be maintained, use a standard WN type.

Type			B48010W		B48020W		
			61W		62W		
Rated Current (In)		A	100		200		
Rated Voltage (Ue)		V	AC480		AC480		
Rated Insulation Voltage (Ui)		V	AC600		AC600		
Rated Impulse Voltage (Uimp)		kV	6		6		
Pole		P	3, 4		3, 4		
Throw		T	One Throw		One Throw		
Connection Type	Front		●		●		
	Back		-		-		
Performance							
Short Time Current(0.05sec) Icw		kA	5		10		
Short Circuit Peak Current Icm		kA	5		10		
With Specific Circuit Breaker		kA	10		14		
Fuse Mounting		kA	200		200		
Utilisation Category ^{Note1)}		Class	AC-33B		AC-33B		
Endurance	Electrical	Cycle	5,000		5,000		
	Mechanical	Cycle	10,000		10,000		
Transfer Sequence			A ↔ B		A ↔ B		
Operation Time	Opening	msec	≤30		≤30		
	Switching	msec	≤60		≤60		
	Off	sec	-		-		
Conditions of Uninterruptible Transfer			3P	4P	3P	4P	
Switching	AC/DC 110V	A	-	-	-	-	
	AC 220V	A	8	8	8	8	
Dimensions & Weights							
Front Size (mm)		H	171	171	171	171	
		W	219	219	219	219	
		D	110	110	110	110	
Back Size (mm)		H	-	-	-	-	
		W	-	-	-	-	
		D	-	-	-	-	
Weight	Front	Kg	2.5	3	3.5	4	
	Back	Kg	-	-	-	-	
Additional Product Information							
Circuit diagram			A6-21		A6-21		
Time chart			A6-18		A6-18		
Drawing			A6-31		A6-31		
Precautions			A6-16		A6-16		

* Note1) Switching Capacity : AC-33B :

Overcurrent Switching Performance (Closing 10×Ie, Breaking 10×Ie, Cosφ = 0.35),
Rated Load Switching Performance (Closing 1×Ie, Breaking 1×Ie, Cosφ = 0.8)

	B60040W			60010WP			60020WP			60040WP		
	64W			61WP			62WP			64WP		
	400			100			200			400		
	AC600			AC600			AC600			AC600		
	AC800			AC800			AC800			AC800		
	8			8			8			8		
	2, 3, 4			2, 3, 4			2, 3, 4			2, 3, 4		
	Double Throw						Double Throw			Double Throw		
	●			●			●			●		
	●			●			●			●		
	12			5			10			12		
	12			5			10			12		
	25			14			25			35		
	200			200			200			200		
	AC-33B			AC-33B			AC-33B			AC-33B		
	5,000			5,000			5,000			5,000		
	10,000			10,000			10,000			10,000		
	A ↔ B			A ↔ Pause ↔ B			A ↔ Pause ↔ B			A ↔ Pause ↔ B		
	≤ 60			≤ 30			≤ 30			≤ 60		
	≤ 200			≤ 200			≤ 200			≤ 200		
	-			3~30			3~30			3~30		
	2P	3P	4P	2P	3P	4P	2P	3P	4P	2P	3P	4P
	7	7	10	5	5	7	7	7	10	8	8	10
	3.5	3.5	5	2.5	2.5	3.5	3.5	3.5	5	4	4	5
	254	254	254	191	191	191	252	252	252	278	278	278
	245	296	347	214	244	274	244	289	334	290	350	410
	119	119	119	112	112	112	112	112	112	132	132	132
	208	208	208	176	176	175	176	176	176	224	224	224
	245	296	347	214	244	274	244	289	334	290	350	410
	207	207	207	148	148	148	158	158	158	216	216	216
	7.5	9	10.5	4.5	6	8	6	8	10	11	14	18
	6	8	10	4.5	6	8	6	8	10	11	14	18
	A6-21			A6-20								
	A6-18			A6-18								
	A6-31			A6-33								
	A6-16			A6-16								

Ratings

Uninterruptible Transfer Types ATS CTTS

100A ~ 3000A

It is a Closed Transition Transfer Switch that automatically transfers without interruption to the control direction within 0.1 second (100ms) by detecting the voltage difference between both powers and frequency difference and checking the synchronizing condition after a simultaneous closing of commercial (A) power and emergency (B) power.



WP type Pause Function
A ↔ Synchronizing ↔ B

Features

Main Plant

Lightning may generate voltage drop for the commercial power or power failure and for the load that requires a long-time recovery, it can be transferred to the emergency power in advance without interruption and back to the commercial power without interruption.

* In case of an uninterruptible transfer,

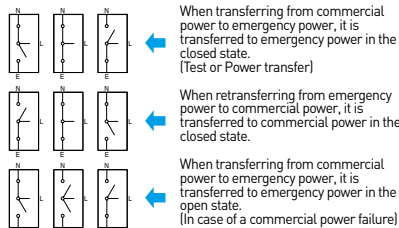
- ① Power failure notified by KEPCO
- ② When the power is recovered and transferred to power plant
- ③ When an instantaneous power failure is expected due to the weather
- ④ When testing a generator or equipment

Uninterruptible transfer is possible when performing the planned maintenance or repairing such as the regular inspection of electrical equipment installed at banks and stations.

UPS Power Transfer Equipment

By examining the phase of both UPS powers, if they are within the standard value, an uninterruptible transfer is possible.

Explanation on Transfer Operation



Type			60010CTTS			60020CTTS			60040CTTS			
			61CT			62CT			62CT			
Rated Current (In)		A	100			200			400			
Rated Voltage (Ue)		V	AC600			AC600			AC600			
Rated Insulation Voltage (Ui)		V	AC800			AC800			AC800			
Rated Impulse Voltage (Uimp)		kV	8			8			8			
Pole		P	2, 3, 4			2, 3, 4			2, 3, 4			
Throw		T	Double Throw			Double Throw			Double Throw			
Connection Type	Front		●			●						
	Back		-			-						
Performance												
Short Time Current(0.05sec) Icw		kA	5			10			12			
Short Circuit Peak Current Icm		kA	5			10			12			
With Specific Circuit Breaker		kA	14			25			35			
Fuse Mounting		kA	200			200			200			
Utilisation Category ^{Note1)}		Class	AC-33B			AC-33B			AC-33B			
Endurance	Electrical	Cycle	5,000			5,000			5,000			
	Mechanical	Cycle	10,000			10,000			10,000			
Transfer Sequence			A ↔ overlapping ↔ B , A ↔ B, A ↔ Neutral(off) ↔ B									
Conditions of Uninetrruptible Transfer												
Operation Time	Closing	msec	≤55			≤55			≤60			
	Trip	msec	≤20			≤20			≤25			
Conditions of Uninterruptible Transfer			2P	3P	4P	2P	3P	4P	2P	3P	4P	
Closing	DC 110V	A	4	4	5	5	5	7	6.4	6.4	9	
	AC 220V	A	2	2	2.5	2.5	2.5	3.6	3.2	3.2	4.5	
Trip ^{note2)}	DC 110V	A	1.4			1.4			2			
	AC 220V	A	0.7			0.7			1			
Dimensions & Weights												
Front Size (mm)		H	268	268	268	283	283	283	307	307	307	
		W	211	241	271	241	286	331	293	353	413	
		D	112	112	112	112	112	132	132	132	220	
Back Size (mm)		H	-	-	-	-	-	-	-	-	-	
		W	-	-	-	-	-	-	-	-	-	
		D	-	-	-	-	-	-	-	-	-	
Weight	Front	Kg	6.5	8	10	8	10	12	14	17	21	
	Back	Kg	-	-	-	-	-	-	-	-	-	
Additional Product Information												
Circuit diagram			A6-24						A6-24			
Drawing			A6-40~42						A6-40~42			
Precautions			A6-18						A6-18			

* **Note1)** Switching Capacity : AC-33B :
Overcurrent Switching Performance (Closing 10×Ie, Breaking 10×Ie, Cosθ = 0.35),
Rated Load Switching Performance (Closing 1×Ie, Breaking 1×Ie, Cosθ = 0.8)

* **Note2)** Trip : The switch in the circuit is opened to the neutral position (OFF) at Power A or B.

* **Note3)** 416CT/425CT Test Report held

Applied Standards

Low Voltage Auto Transfer Switch ... ATS, CTTS

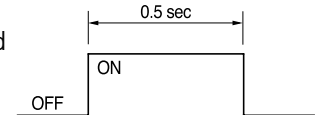
Consideration points when applying and selecting

Relevant Standards

- UL 1008
- IEC 60947-6-1

Control Command

Closing and trip transfer operation is completed within 0.3 second but set Sequence so that it can be operated with a control command of 0.5sec or more.



Interlock

Install an interlock (electrical) so that A power source and B power source are not commanded simultaneously at the operating circuit.

In case of WN Type, set a Sequence so that closing command and trip command are not in the same direction.

TR Capacity for Operating Circuit

The TR capacity of operating circuit should be calculated as shown below and use the capacity that exceeds the calculated value.

Operating Voltage \times Operating Current $\times 0.5 = (\quad)$ VA

ex) Operating Voltage AC220V Operating Current 4A
 $220 \times 4 \times 0.5 = 440$ VA
 Use TR with 440VA or above.

Control Circuit

ATS is designed to turn OFF the operating current using an internal SW after the operation is completed. When the operating current is turned OFF by an auxiliary SW of body, it may lead to malfunctioning.

Selection of Control Relay

Use the selected voltage Relay 27, 84 and Timer with contact conducting current that exceeds the ATS operating current.

Considering the chattering of control relay, select a relay that can interrupt the operating current which is safer.

* When the operating power is unstable, use a voltage fixed relay.



Type classification and order marking method

Division	Basic Type						Pole			Connection Type		Control Voltage		Auxiliary contact		Customer		Applicable standard					
	Basic Type	Type	Rated Voltage	Rated Current	Transfer method	②	③	④	Front	Back	AC220V	DC110V	1a1b	2a2b	Domestic	Export	IEC	UL					
						F	B	A22	D11	11	22	D	A	I	U								
Miniature	VAT VITZRO ATS	None	②5 AC250V	①0 100A ②0 200A	HS	○	-	-	○	-	○	-	①1 1a1b	①1 1a1b (②2 2a2b) ^{*)}	①1 1a1b (②2 2a2b) ^{*)}	①1 1a1b (②2 2a2b) ^{*)}	①1 IEC						
Economic			B	④8 AC480V		①0 100A ②0 200A	W	-	○	○	○	-							○	-			
		⑥0 AC600V		④0 400A	○	○		○	○	○	○	○											
		None		⑥0 AC600V	①0 100A ②0 200A ④0 400A	WP		○	○	○	○	-	○						○				
			①1 1a1b (②2 2a2b) ^{*)}		①1 1a1b (②2 2a2b) ^{*)}																		
		Standard	B	⑥0 AC600V	①0 100A ②0 200A ④0 400A ⑥3 630A ⑧0 800A	WN	○	○	○	○	○	○	○						①1 1a1b (②2 2a2b) ^{*)}				
					-		○	○	○	○	○	○											
					-		○	○	○	○	○	○											
-					○		○	○	○	○	○												
-					○		○	○	○	○	○												
-					○		○	○	○	○	○												
-					○		○	○	○	○	○												
-					○		○	○	○	○	○												
-					○		○	○	○	○	○												
CTTS			None	⑥0 AC600V	①0 100A ②0 200A ④0 400A ⑥3 630A ⑧0 800A	CTTS	○	○	○	○	-	○	○						②2 2a2b				
		-			○		○	○	-	○	○												
		-			○		○	○	-	○	○												
		-			○		○	○	-	○	○												
		-			○		○	○	-	○	○												
		-			○		○	○	-	○	○												
		-			○		○	○	-	○	○												
		-			○		○	○	-	○	○												
		-			○		○	○	-	○	○												
VAT		C	60	320	WN	4			B	A22		11	D						I				
Basic Type (VITZRO ATS)		Compact Type (C-Type)	Rated Voltage	Rated Current	Transfer method	Pole (4P)	Connection Type		Control Voltage (AC220V)		Auxiliary contact	Customer (Domestic)							Applicable standard				

- 1) Please contact us if you need other control voltage. (Ex) AC230V, AC240V etc.)
- 2) Please contact us if you need other Rated Current. (Ex) 600A , 1200A , 3000A etc.)
- 3) The auxiliary contact is composed of W, WN 1a1b, CTTS 2a2b as basic specifications.
- 4) Option: Please select if you need additional auxiliary contact.
- 5) As for the customer classification, the nameplate specification consists of domestic and export.

Applied Standards

Low Voltage Auto Transfer Switch ATS, CTTS

Installation Location

Avoid high-temperature and highly humid places and places with poisonous gas.

Installation Direction

ATS is designed to use it by installing it in a certain direction. When the installation direction is changed, the feature will be changed. So, install it accurately.

ATS should be installed so that the body rating plate can be read properly when facing the front and it should be installed without any twist, vertical to the panel.

* If a normal installation is not possible due to problems on wiring or equipment arrangement, consult with our company.

Operating Power

In case of DC operation and if a dropper circuit is included in the operating power, the operating power of ATS must be connected to the input part of dropper circuit.

Control Circuit Connection

Use a control power and control line with extra length.

In case of DC operation, be cautious of battery shortage and charging shortage.

Main Circuit Connection

Firmly connect it by selecting wire size and solderless terminal that meets the current capacity.

Be careful not to add an excessive stress to the main circuit terminal.

Especially, when connecting using a Busbar, be careful not to add an excessive stress to the main circuit terminal.

Precautions when Operating Handle

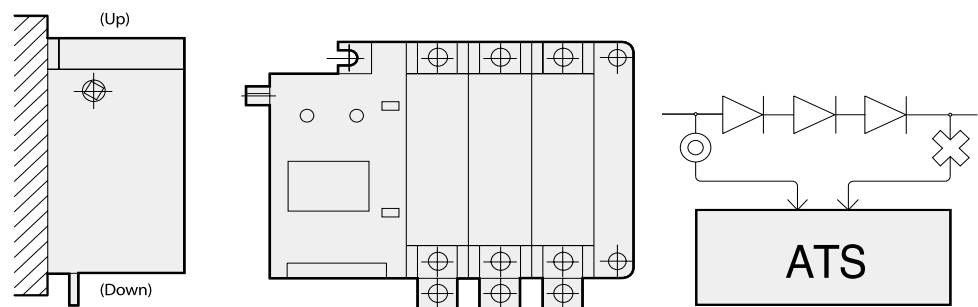
Manual operation of ATS should be carried out only when a detailed inspection of operating part and charging part is performed at no-load status.

There may be some differences in switch force, switch speed and so on based on the manual operation of the operator, so ATS features cannot be guaranteed.

Maintenance & Inspection

Conduct maintenance and inspection at regular cycle in order to maintain the performance of ATS steadily and well.

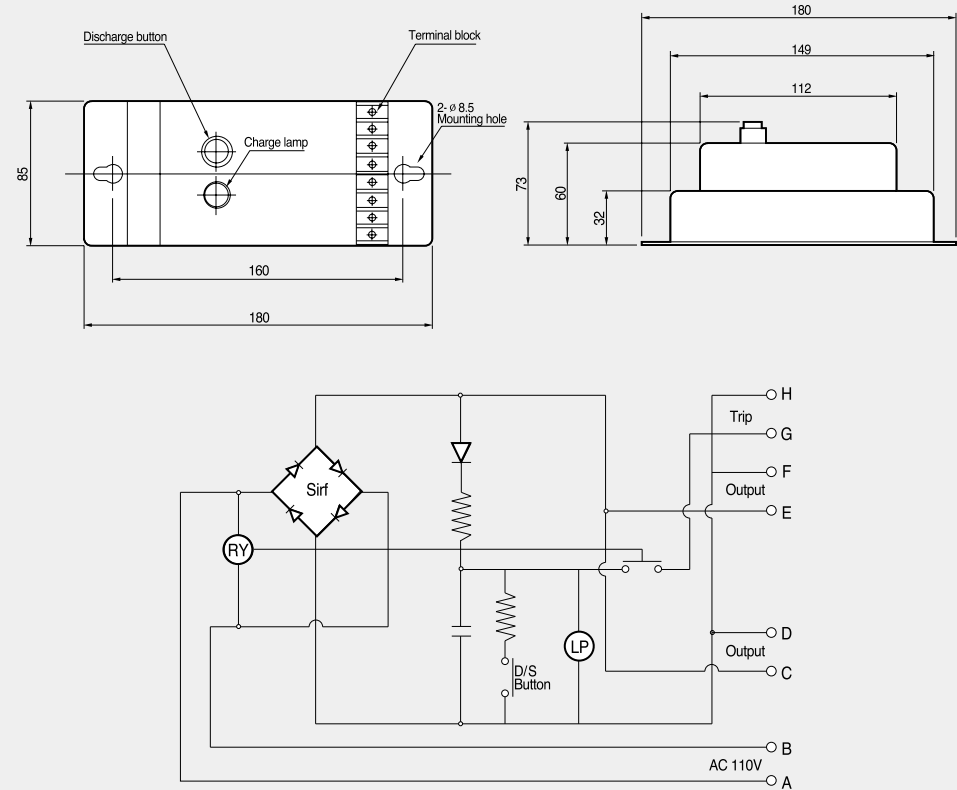
* Refer to the maintenance and inspection items presented in the instruction manual for the detailed information.



Low Voltage Auto Transfer Switch ATS, CTS

Option

Capacitor Trip Device

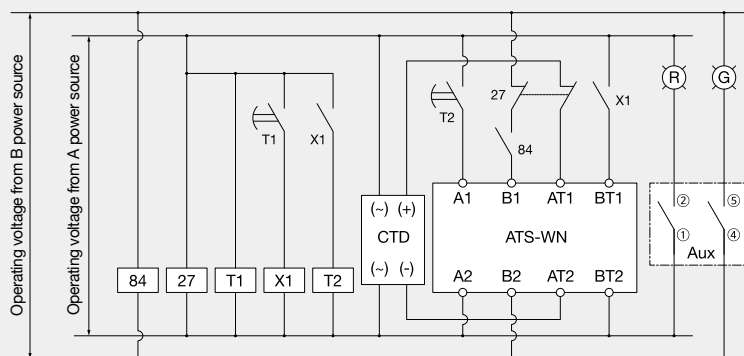


When using as CTD

When G, H terminals are connected to Trip Circuit during a power failure, it immediately trips. If tripping is required at an optional time, it can be used by adding S/W.
(Normal operation is possible within 30 seconds)

When using as Rectifier

C.D and E.F output terminals can be used as DC power.
(Close, Open, Motor OCR Power and etc)



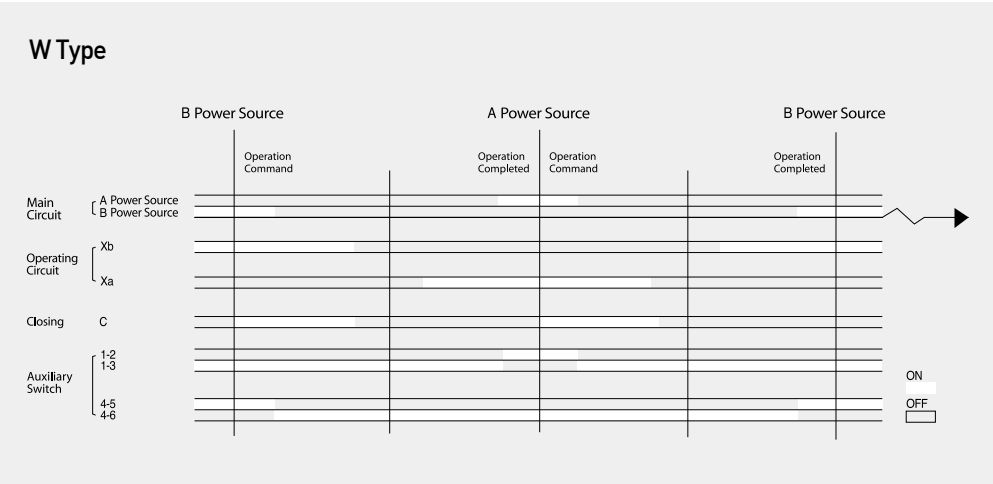
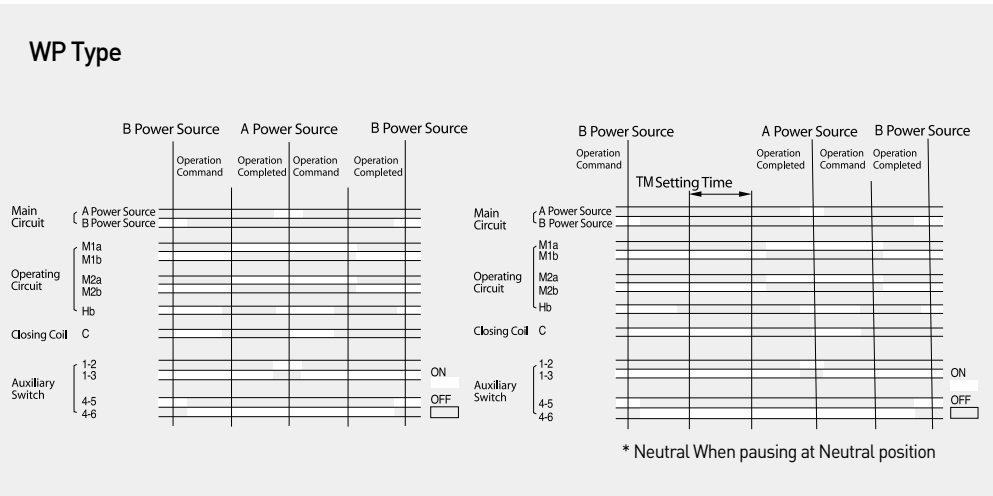
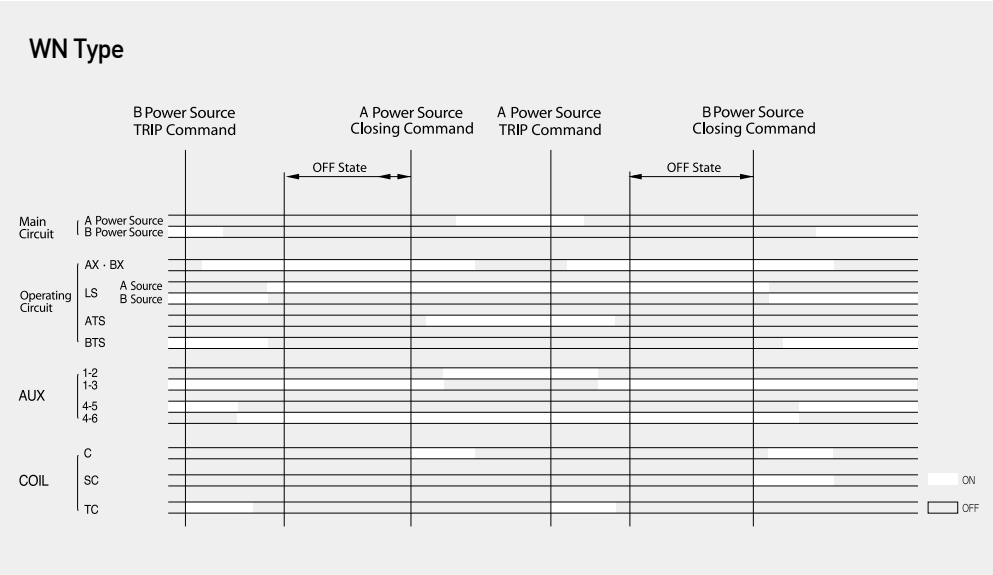
CONDENSOR TRIP의 경우

* X1 (제어 Relay) : CTD (Condensor Trip 장치) Condensor의 충전 시간을 고려하여 Timer의 시간을 설정하여 주십시오.

Contact Time Charts & Circuit Diagrams

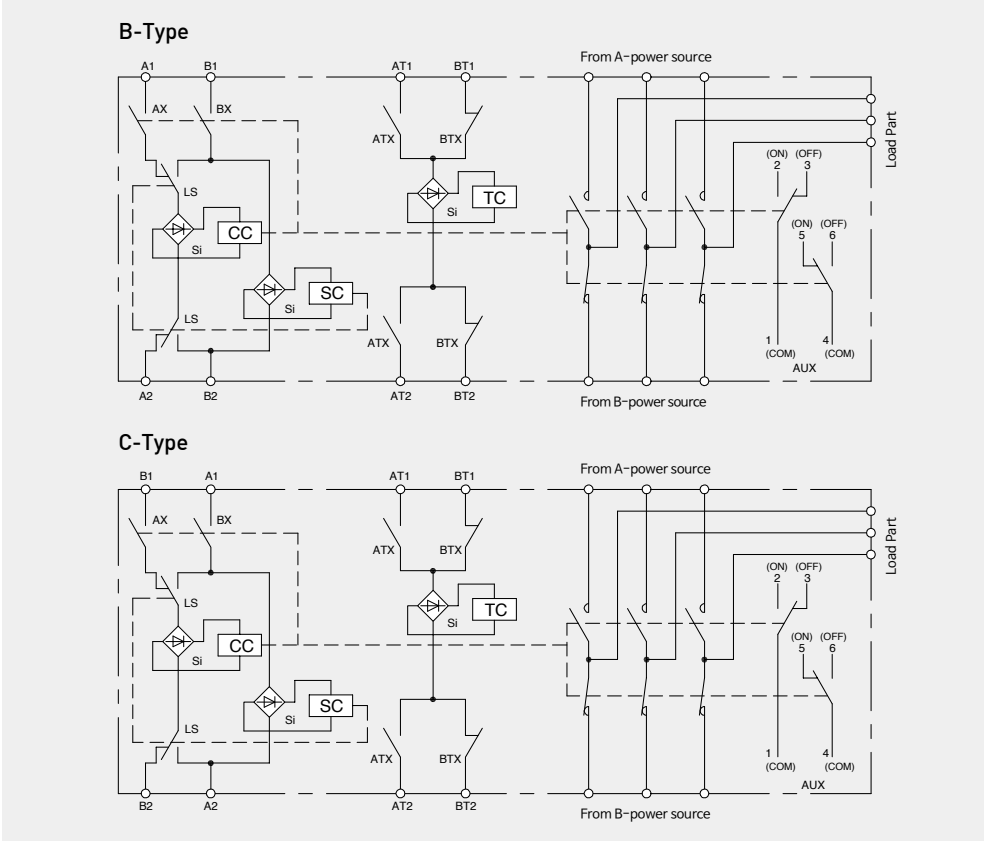
Low Voltage Auto
Transfer Switch
ATS, CTTS

Contact Time Charts

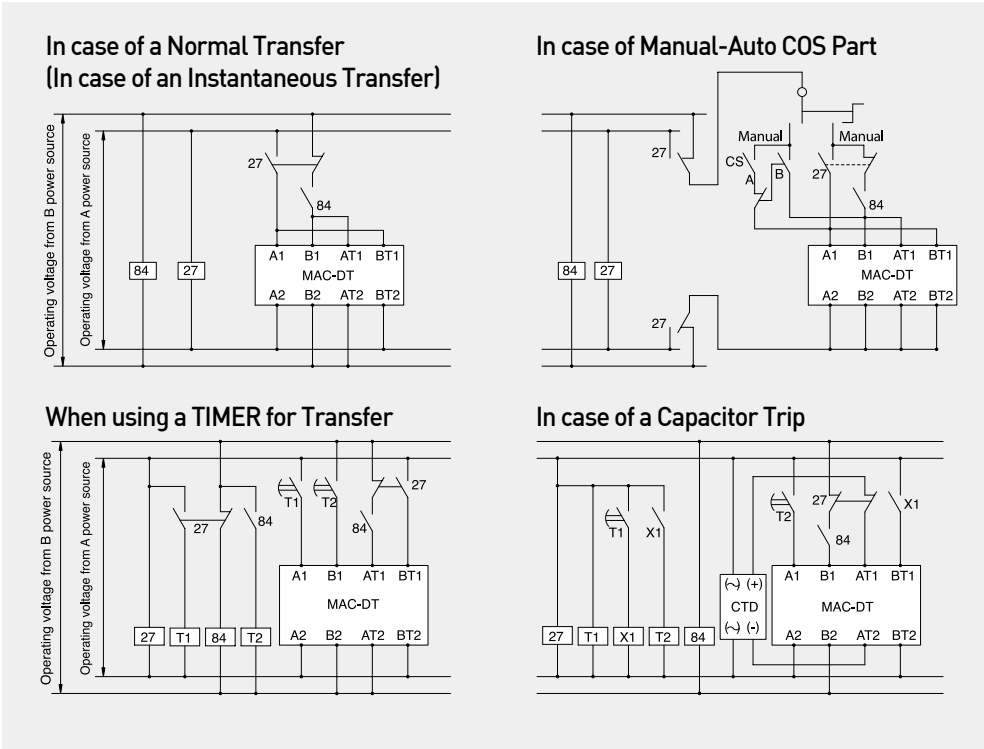


Low Voltage Auto
Transfer Switch
ATS, CTTS

WN Type Internal Circuit



WN Type Operating Circuits



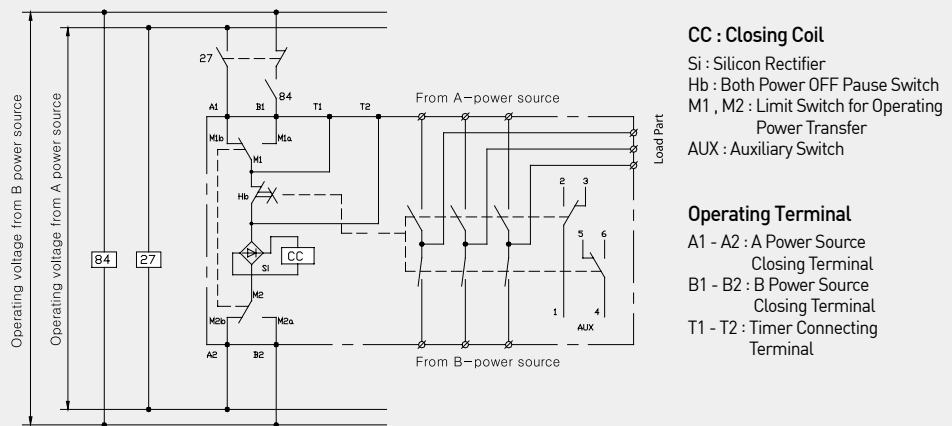
Circuit Diagrams

Low Voltage Automatic Transfer Switch ATS, CTTS

WP Type

Internal Circuit

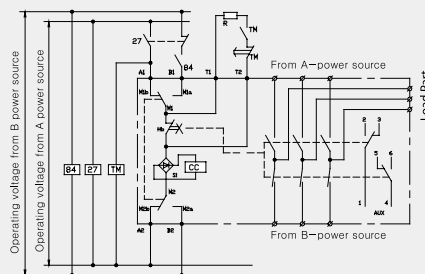
Control Circuit in case of a pause at neutral point



Operating Circuit 1

Pausing at Neutral Point when transferring B → A

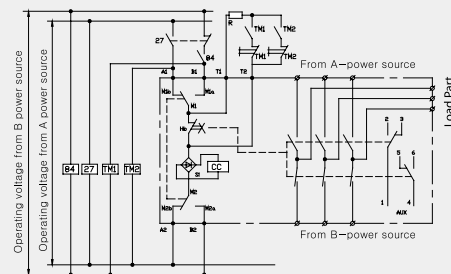
TM : Timer
 R : Limited Resistance
 27, 84 : Voltage Relay



Operating Circuit 2

Pausing at Neutral Point when transferring from both ways, A → B, B → A

TM1, TM2 : Timer
 R : Limited Resistance
 27, 84 : Voltage Relay



Precautions

- To pause at a neutral position, connect a Timer and limited resistance to T1, T2 terminals.
 * Prepare a separate Timer and limited resistance.
- If the pause time is less than 3 seconds at the neutral position, the limited resistance should not be installed.
- The operating voltage to use when pausing at the neutral position should be AC 110, AC 220V.
- When operating continuously, it should be within 5 times. When operating continuously for more than 5 times, it may malfunction due to overheating of coil or coil may be burned. Be cautious.
- When it is required to pause for more than 30 seconds (Both power OFF), use WN-Type of our company.

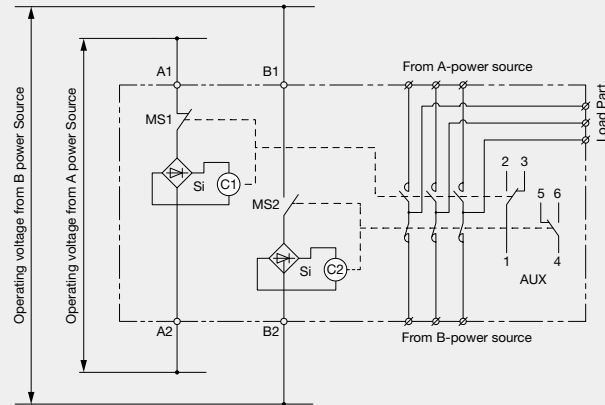
Limited Resistance

Type	61WP~62WP		64WP	
Operating Voltage	AC110V	AC110V	AC110V	AC220V
Timer Used	Select a Timer that can interrupt the operating current.			
Timer Adjusting Time	3sec~30sec			
Limited Resistance	Rated Power	200W	200W	200W
	Resistance	50Ω	50Ω	50Ω

W Types

100~200A

Control Circuit Diagram

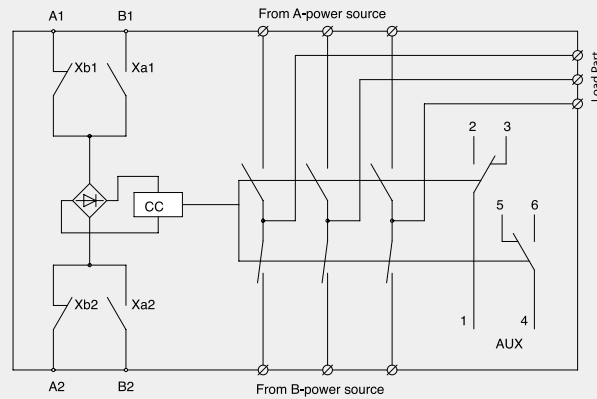


C1, C2 : Closing Coil
Si : Silicon Rectifier
MS1, MS2 : Manipulation for Power Source Limit Switch
AUX : Auxiliary Switch

Operating Terminal
A1 - A2 : A-Power Source Closing Terminal
B1 - B2 : B-Power Source Closing Terminal

400A

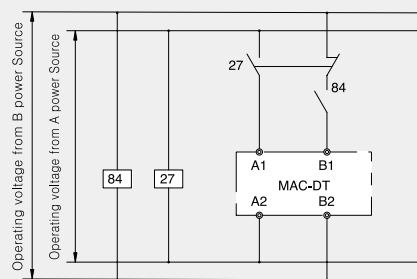
Internal Circuit



Xa1-Xa2, Xb1-Xb2 : Control Switch
CC : Closing Coil
Si : Silicon Rectifier

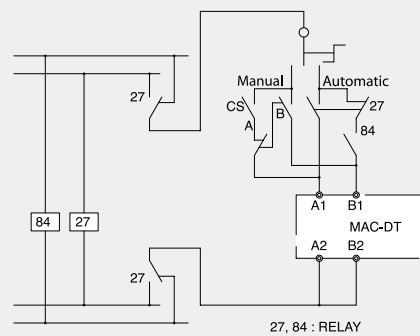
Operating Terminal
A1 - A2 : A-Power Source Closing Terminal
B1 - B2 : B-Power Source Closing Terminal

Operating Circuit 1



In case of a Normal Transfer
(In case of an Instantaneous Transfer)
* 27, 84 : Voltage Relay

Operating Circuit 2



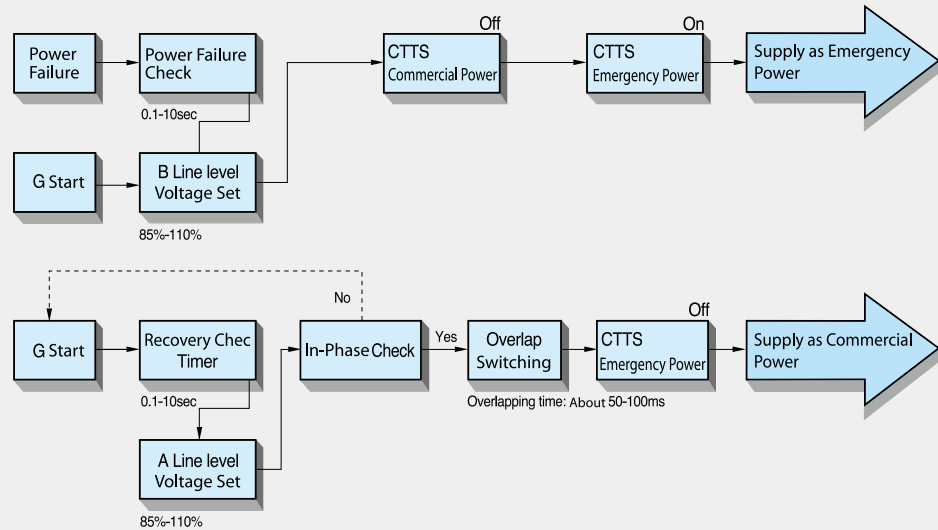
In case of Manual-Auto COS Part
* 27, 84 : Voltage Relay

Circuit Diagrams

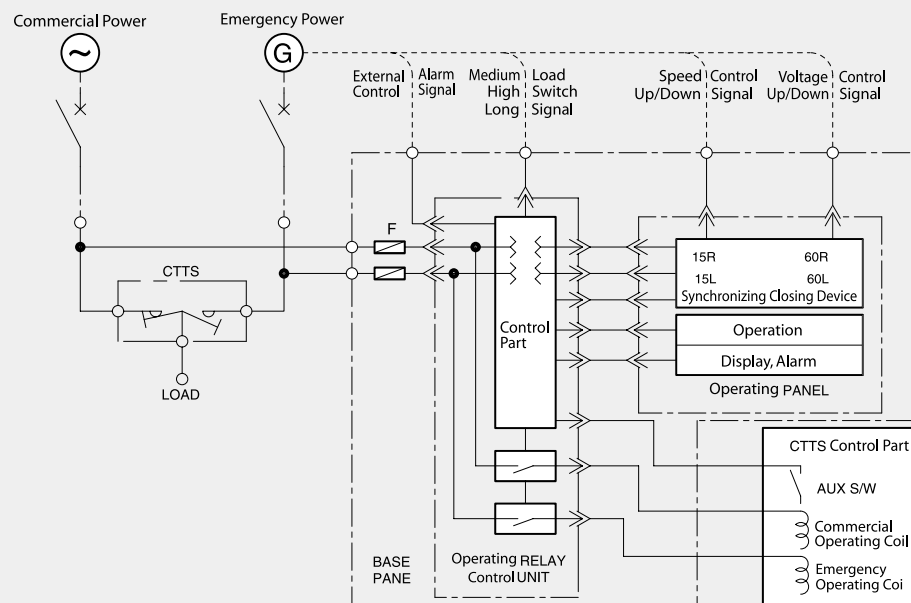
Low Voltage Automatic Transfer Switch ATS, CTTS

CTTS

Operational Flow Chart

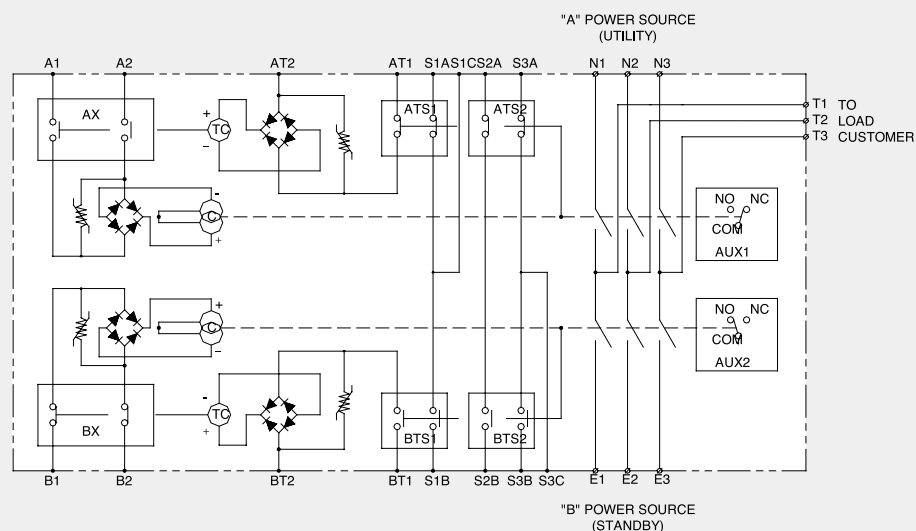


Operating Circuit



Low Voltage Automatic Transfer Switch ATS, CTTS

Internal Circuit



A1, A2	"A" Power source side(On)
AT1, AT2	"A" Power source side(Trip)
ATS1, ATS2	Switch, Position contacts
BTS1, BTS2	
AUX1, 2	Switch, Auxiliary
AX, BX	Switch, Control
B1, B2	"B" Power source side(On)
BT1, BT2	"B" Power source side(Trip)
C	Coil, Closing
COM	Common
CTTS	Closed transition transfer switch
E1, E2, E3	Standby power source conn.
NO	Normally open
NC	Normally closed
N1, N2, N3	Utility power source
S1A, S1B, S1C	Switch, Position sensing
S2A, S2B	
S3A, S3B, S3C	
TC	Coil, Trip
T1, T2, T3	Customer load conn.

All contacts of switch shown in
Utility : Closed
Standby : Open

× : Closed ○ : Open

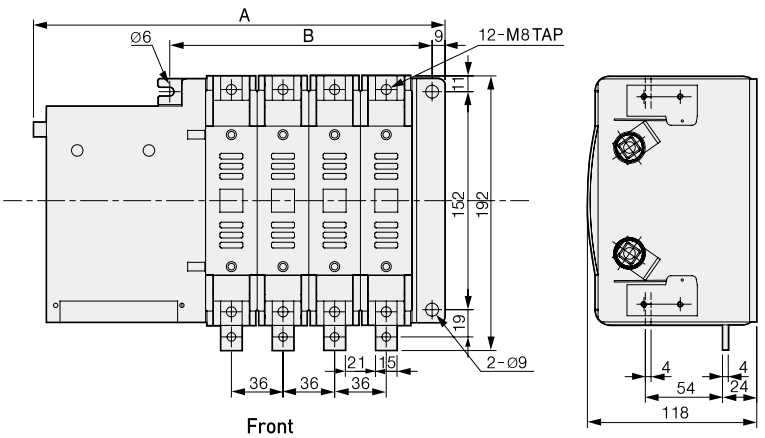
Utility side	Switch position	Utility closed	Neutral	Utility open
Aux. 1	COM - NC	×	○	○
	COM - NO	○	×	×

Standby side	Switch position	Standby Open	Neutral	Standby closed
Aux. 2	COM - NC	○	○	×
	COM - NO	×	×	○

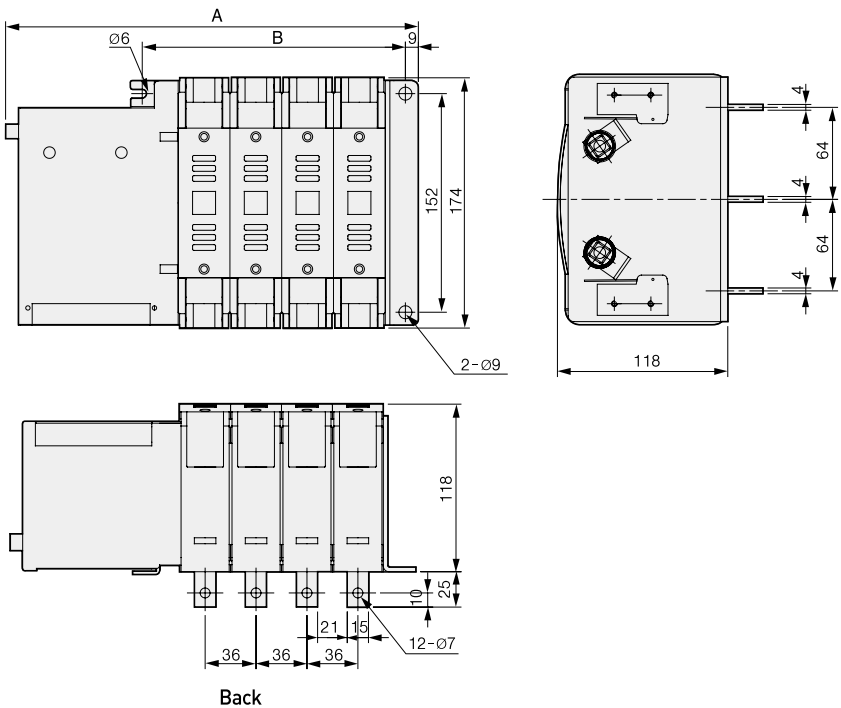
External Sizes

Low Voltage
Automatic
Transfer Switch
ATS, CTTS

WN B-Type100A~200A



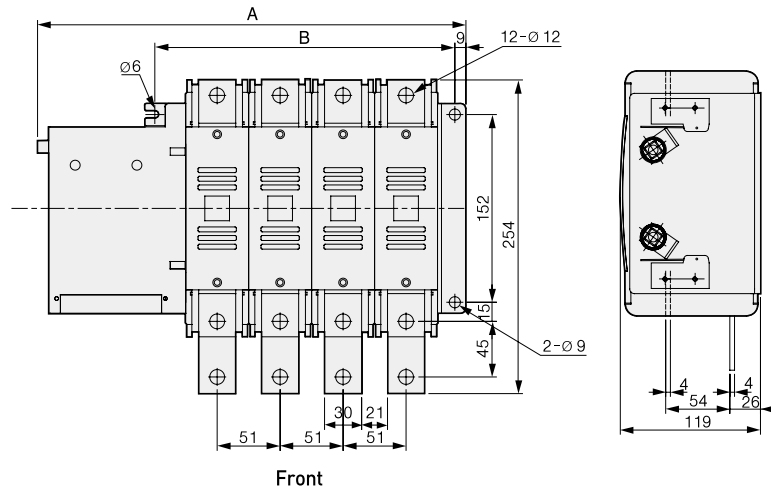
Type	A	B
2P	215	111
3P	251	147
4P	287	183



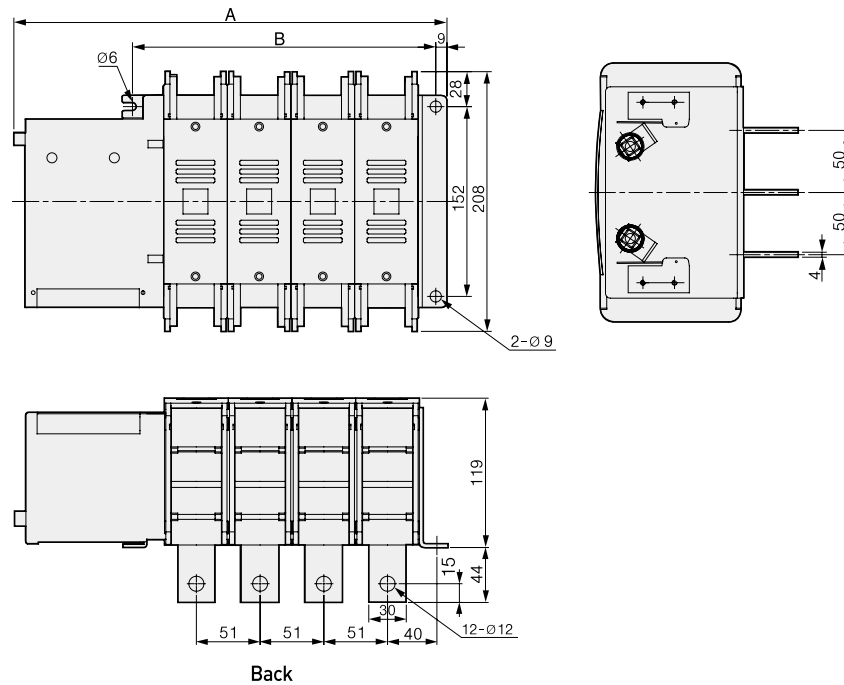
Type	A	B
2P	215	111
3P	251	147
4P	287	183

Low Voltage
Automatic
Transfer Switch
ATS, CTTS

WN B-Type 400A



Type	A	B
2P	245	141
3P	296	192
4P	347	243

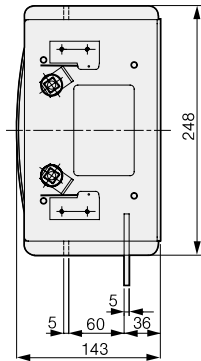
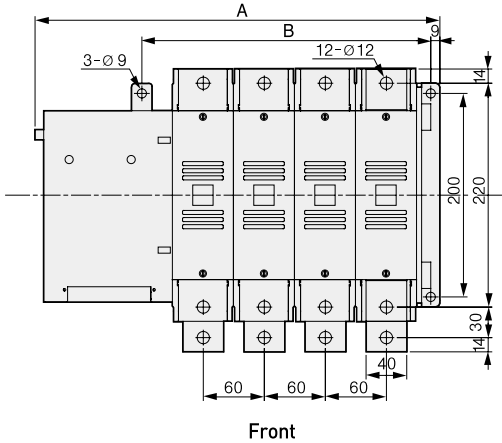


Type	A	B
2P	245	141
3P	296	192
4P	347	243

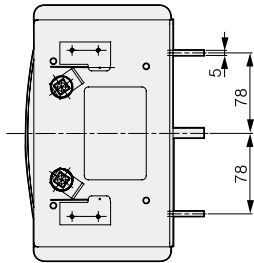
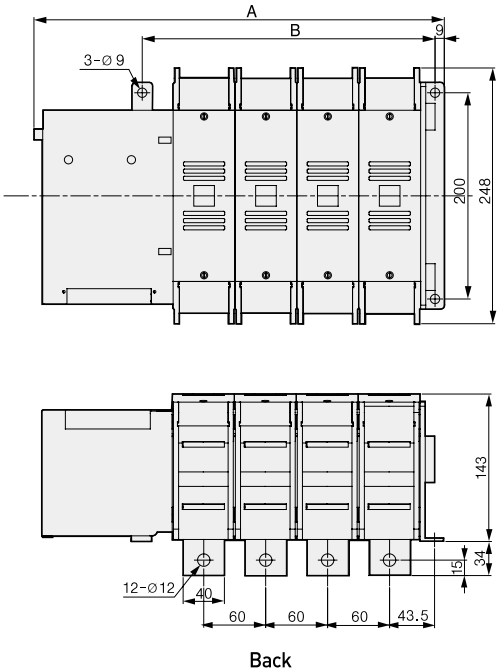
External Sizes

Low Voltage
Automatic
Transfer Switch
ATS, CTTS

WN B-Type 600~630A



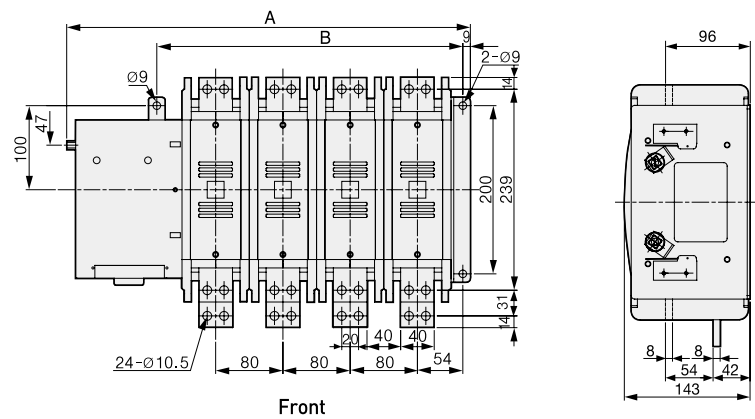
Type	A	B
3P	340	224
4P	400	284



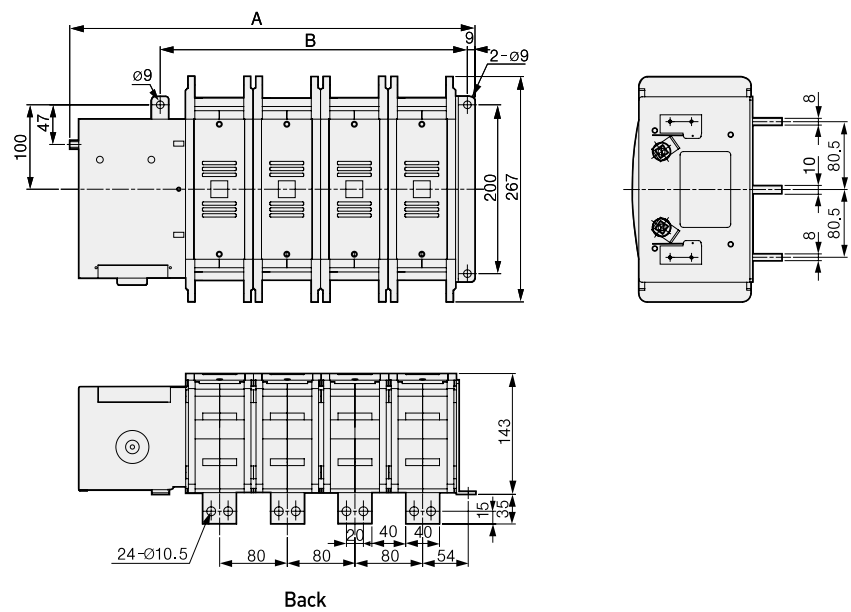
Type	A	B
3P	340	224
4P	400	284

Low Voltage
Automatic
Transfer Switch
ATS, CTTS

WN B-Type 800A



Type	A	B
3P	400	284
4P	480	364

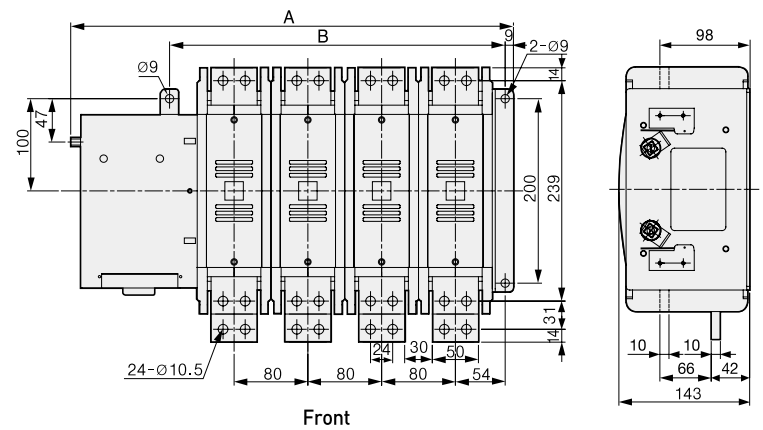


Type	A	B
3P	400	284
4P	480	364

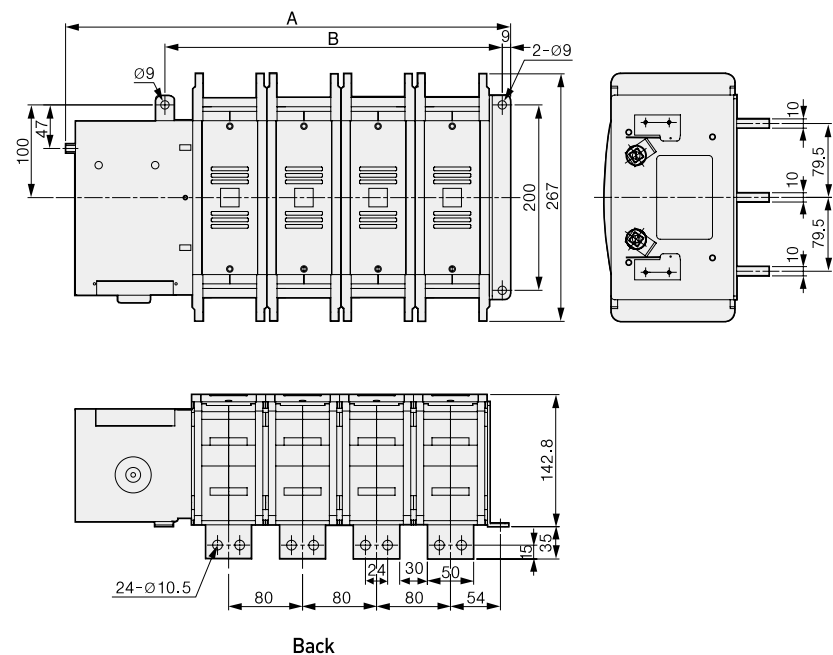
External Sizes

Low Voltage
Automatic
Transfer Switch
ATS, CTTS

WN B-Type 1000A



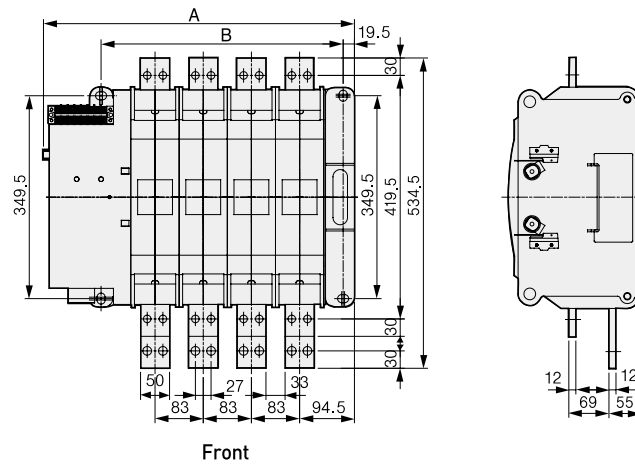
Type	A	B
3P	400	284
4P	480	364



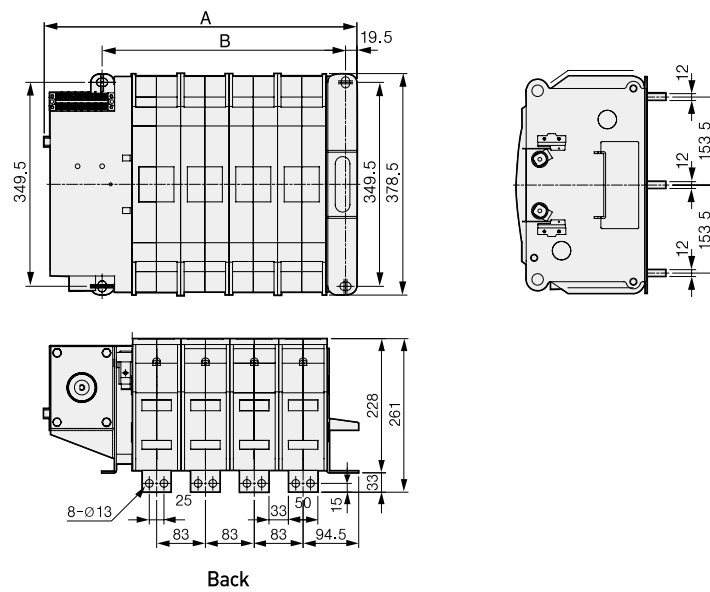
Type	A	B
3P	400	284
4P	480	364

Low Voltage
Automatic
Transfer Switch
ATS, CTTS

WN Type 612WN



Type	A	B
3P	452.5	334
4P	535.5	417

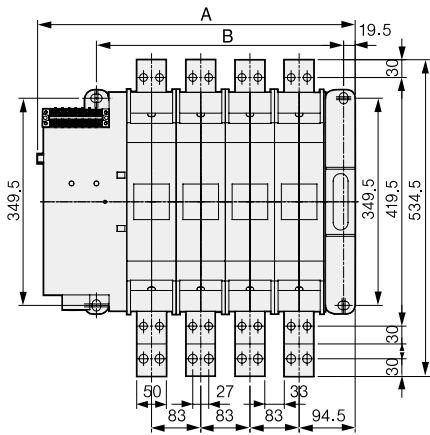


Type	A	B
3P	452.5	334
4P	535.5	417

External Sizes

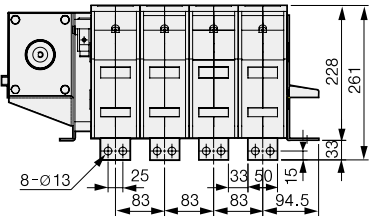
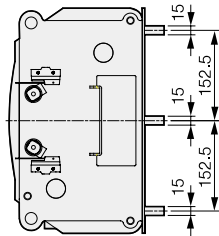
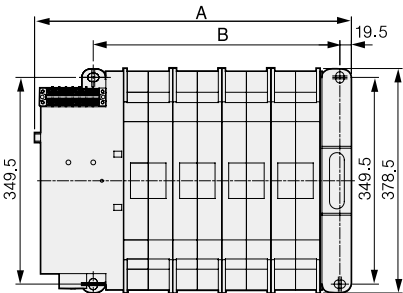
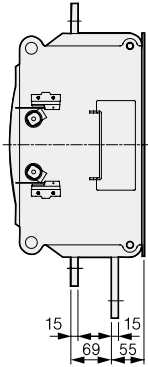
Low Voltage
Automatic
Transfer Switch
ATS, CTTS

WN Type 616WN



Front

Type	A	B
3P	452.5	334
4P	535.5	417

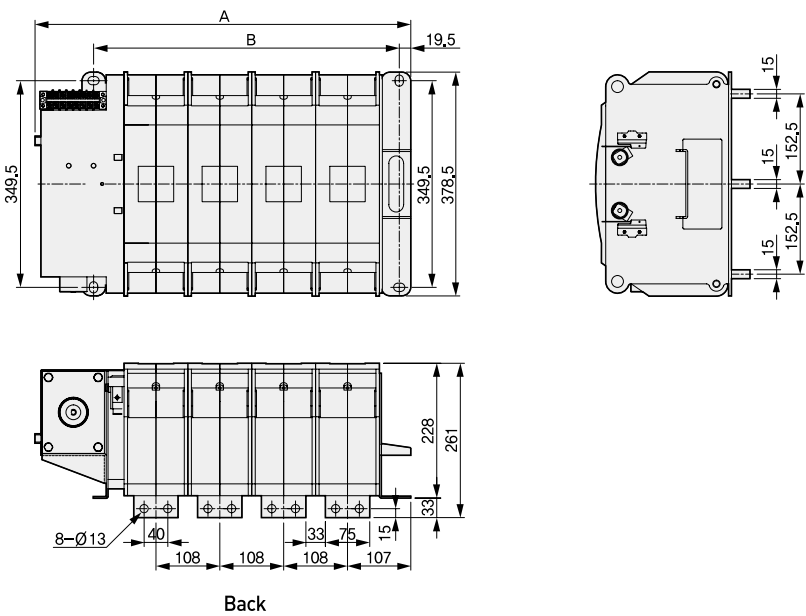


Back

Type	A	B
3P	452.5	334
4P	535.5	417

Low Voltage
Automatic Transfer
Switch ATS, CTTS

WN Type 620WN

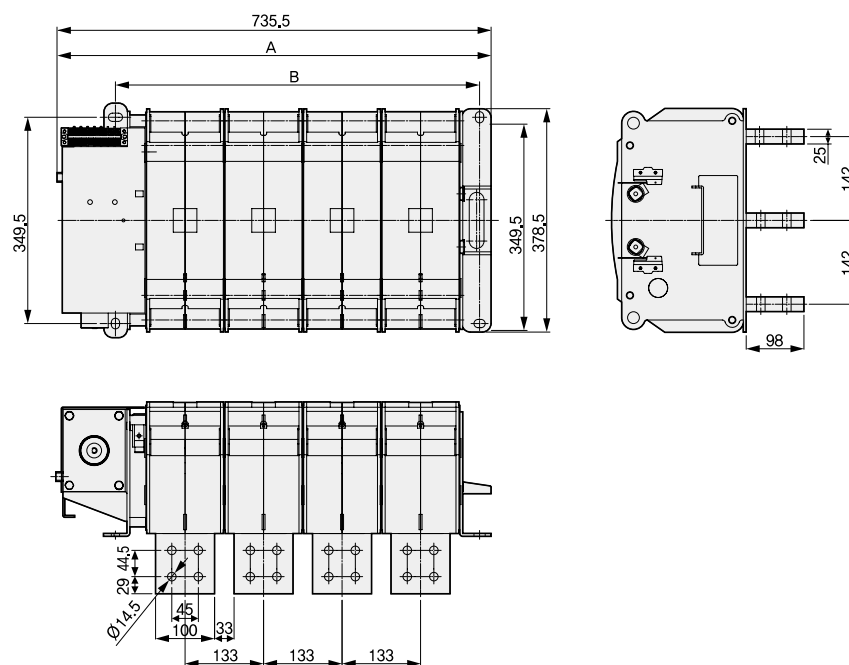


Type	A	B
3P	527.5	409
4P	635.5	517

External Sizes

Low Voltage
Automatic
Transfer Switch
ATS, CTTS

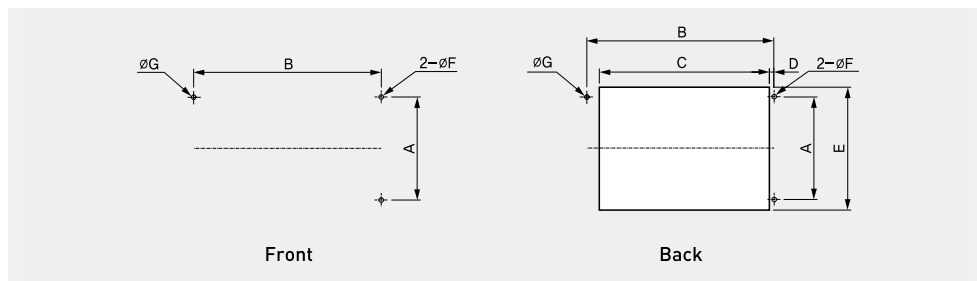
WN Types 625~630WN



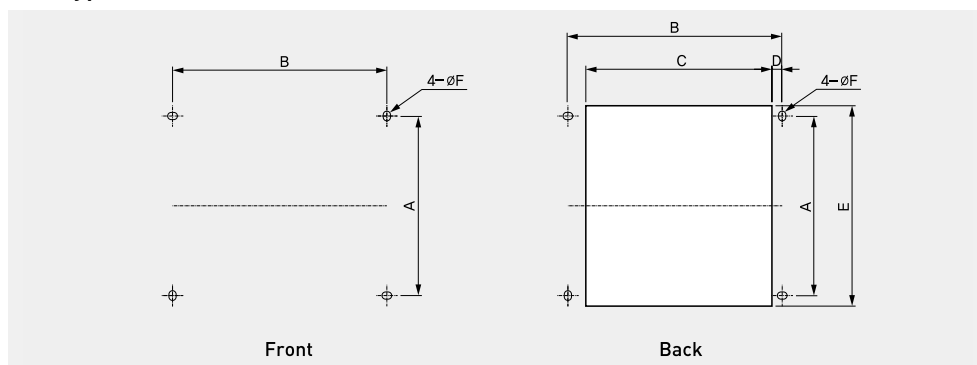
Type	A	B
3P	602.5	484
4P	735.5	617

Panel Processing Dimension

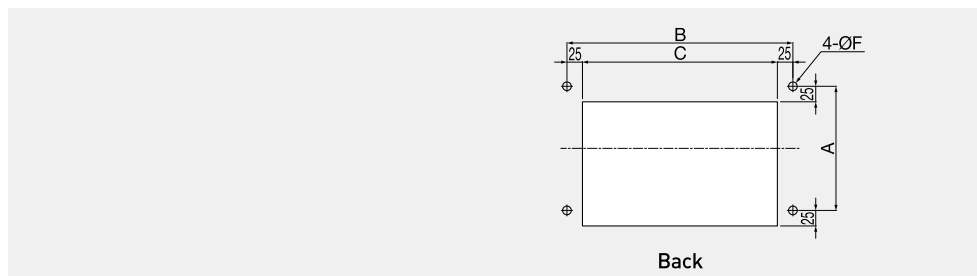
WN Types 100A~1000A



WN Types 1200A~3000A



WN Types 1200A~3000A

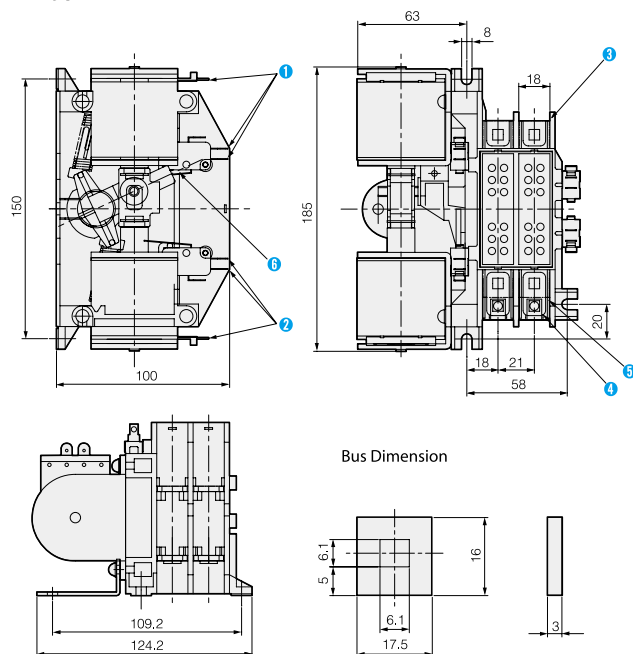


Type		WN B-Type								WN C-Type		
		100~200A		400A		630A		800~1000A		1250A~1600A	2000A	2500A~3200A
		Front	Back	Front	Back	Front	Back	Front	Back	Back	Back	Back
A		152	152	152	152	200	200	200	200	250	250	250
B	2P	111	111	141	141	-	-	-	-	-	-	-
	3P	147	147	192	192	224	224	284	284	297	372	449
	4P	183	183	243	243	284	284	364	364	380	480	582
C	2P	-	88	-	118	-	-	-	-	-	-	-
	3P	-	124	-	169	-	200	-	250	247	322	399
	4P	-	160	-	220	-	260	-	330	330	430	532
D		-	9.5	-	9.5	-	9	-	9	-	-	-
E		-	172	-	155	-	215	-	240	-	-	-
F		10	10	10	10	10	10	10	10	14	14	14
G		7	7	7	7	-	-	-	-	-	-	-

External Sizes

Low Voltage Automatic Transfer Switch ATS, CTTS

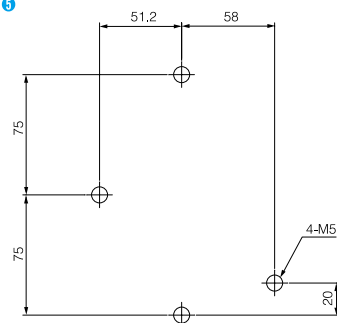
HS Type 21HS



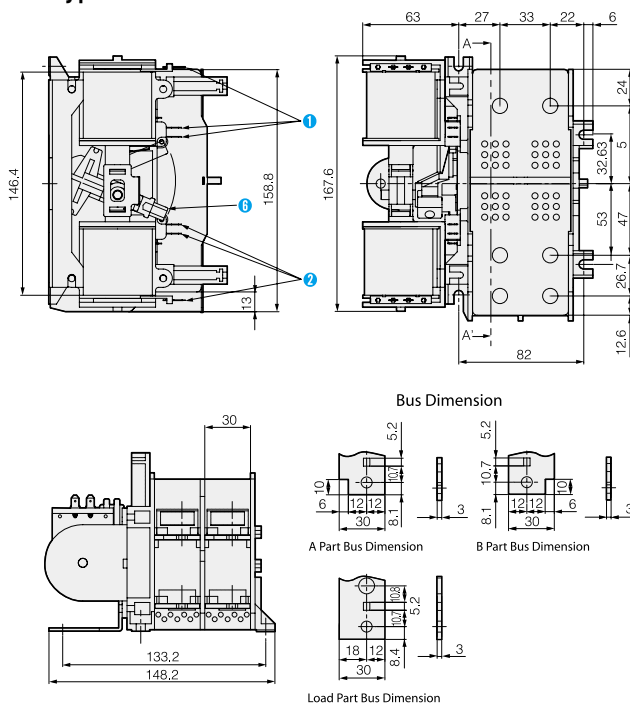
Part Names

- ① A Operating circuit terminal
- ② B Operating circuit terminal
- ③ A power source side main circuit terminal
- ④ Loading side main circuit terminal
- ⑤ B power source side main circuit terminal
- ⑥ Manual operating lever

Panel Processing Dimension (Front)/100A 2P

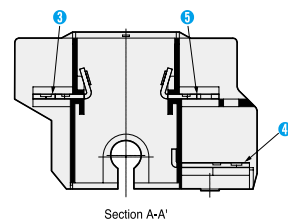


HS Type 22HS

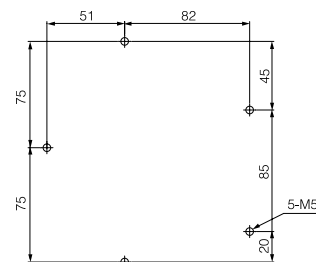


Part Names

- ① A Operating circuit terminal
- ② B Operating circuit terminal
- ③ A power source side main circuit terminal
- ④ Loading side main circuit terminal
- ⑤ B power source side main circuit terminal
- ⑥ Manual operating lever



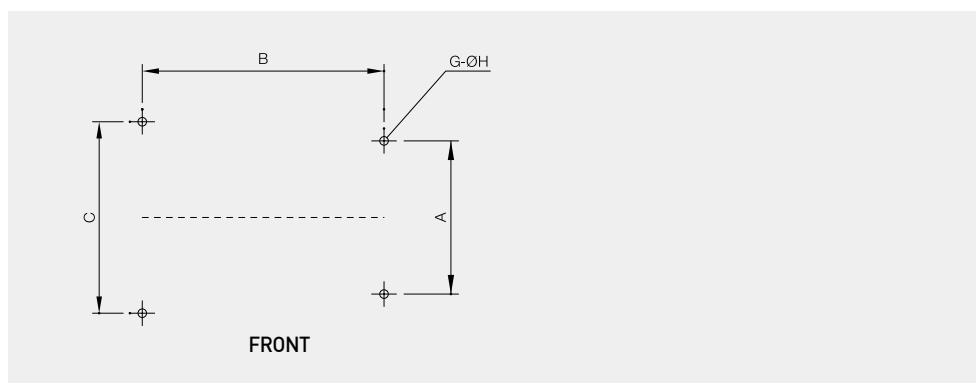
Panel Processing Dimension (Front)/200A 2P



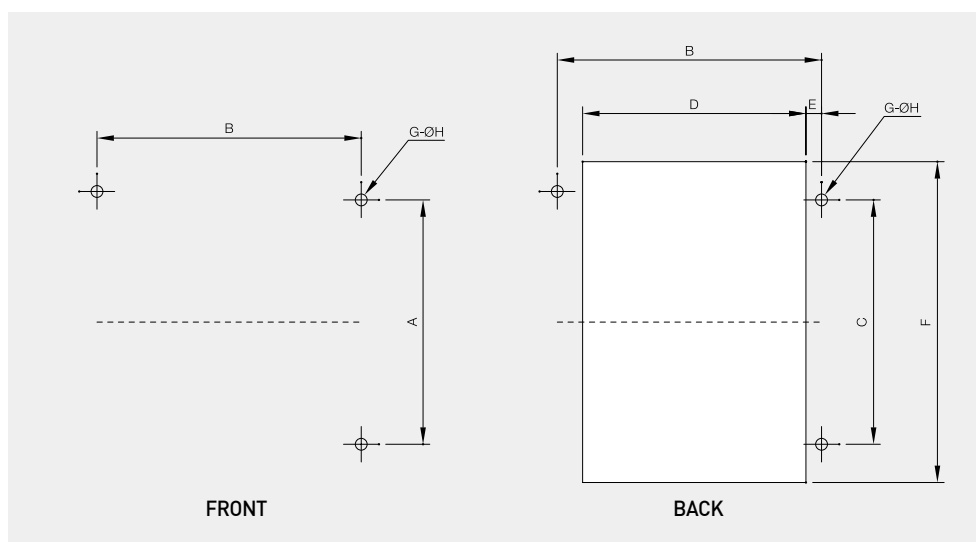
External Sizes

Panel Processing Dimensions

W B-Type 100A~200A



W B-Type 400A

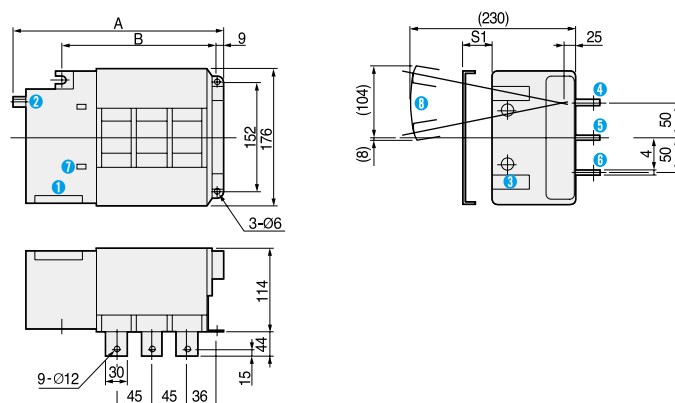


Type		100~200A	400A	
		Front	Front	Back
A		91	152	-
B	2P	-	141	141
	3P	148	192	192
	4P	148	243	243
C		150	152	152
D	2P	-	-	120
	3P	-	-	170
	4P	-	-	220
E		-	-	9.5
F		-	-	155
G		4	3	3
H		9	9	9

External Sizes

Low Voltage Automatic Transfer Switch ATS, CTS

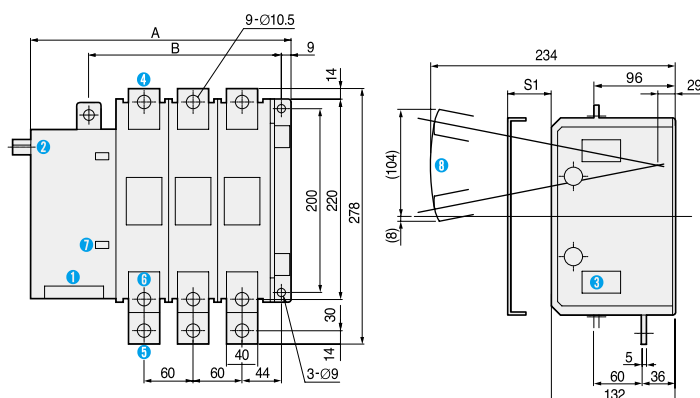
WP Type 200A Back connection



Arc space size (S1) is 30mm when the main circuit voltage is 220V and 60mm when it is 600V.

Type	A	B
2P	244	143
3P	289	188
4P	334	233

WP Type 400A Front connection



Arc space size (S1) is 30mm when the main circuit voltage is 220V and 60mm when it is 600V.

Type	A	B
2P	290	174
3P	350	234
4P	410	294

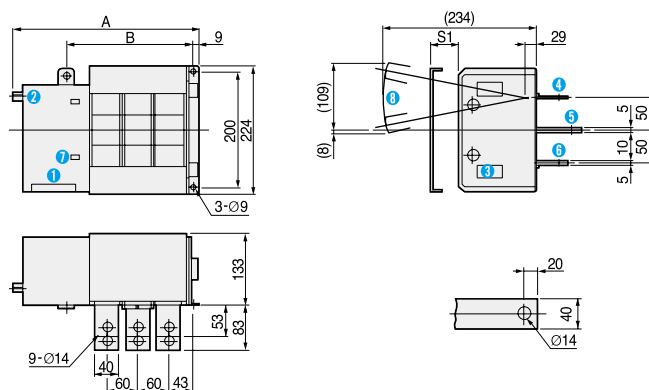
- ① Operation Main Circuit Terminal
- ② Manual Operating Shaft

- ③ Auxiliary Switch
- ④ A-Power Source Main Circuit Terminal

- ⑤ Load Part Main Circuit Terminal
- ⑥ B-Power Source Main Circuit Terminal

- ⑦ Switch Display
- ⑧ Manual Handle

WP Type 400A Back connection



Arc space size (S1) is 30mm when the main circuit voltage is 220V and 60mm when it is 600V.

Type	A	B
2P	290	174
3P	350	234
4P	410	294

- ① Operation Main Circuit Terminal
- ② Manual Operating Shaft

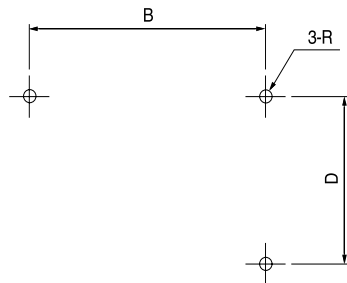
- ③ Auxiliary Switch
- ④ A-Power Source Main Circuit Terminal

- ⑤ Load Part Main Circuit Terminal
- ⑥ B-Power Source Main Circuit Terminal

- ⑦ Switch Display
- ⑧ Manual Handle

Panel Processing Dimensions

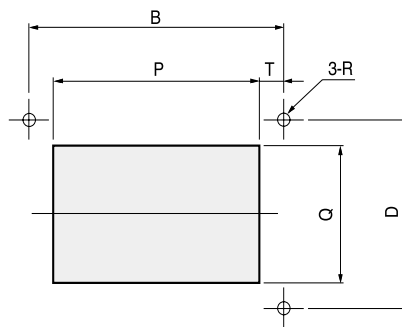
WP Types 61-64WP Front connection



WP-Type

Type	606-61WP	62WP	64WP
B	2P	113	143
	3P	143	188
	4P	173	233
D	152	152	200
R	M5		M8

WP Types 61-64WP Back connection



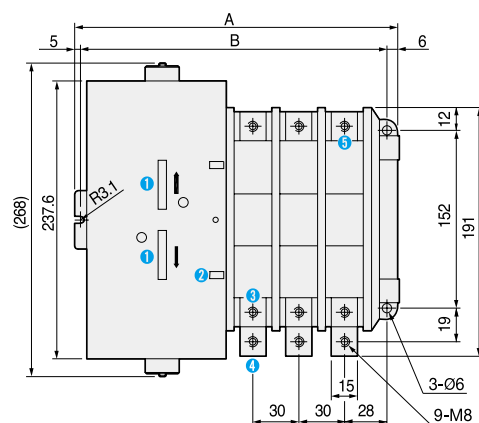
WP-Type

Type	606-61WP	62WP	64WP
B	2P	113	143
	3P	143	188
	4P	173	233
D	152	152	200
R	2P	85	110
	3P	115	155
	4P	145	200
Q	140		180
T	7.5		9
R	M5		M8

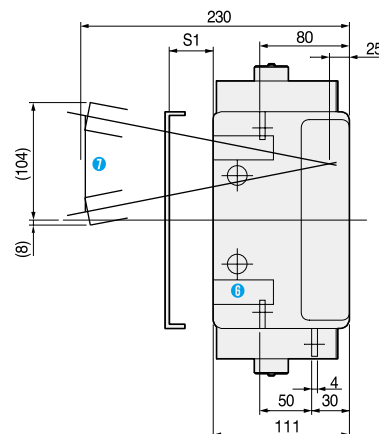
External Sizes

Low Voltage Automatic Transfer Switch ATS, CTTS

CTTS Type 100A Front connection



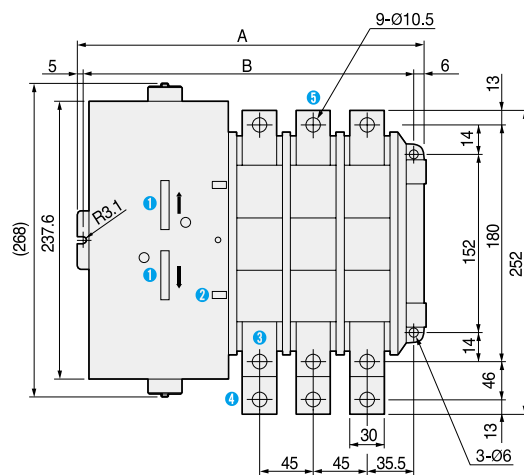
- ① Manual Operation Hole
- ② Switch Display
- ③ B-Power Source Main Circuit Terminal
- ④ Load Part Main Circuit Terminal
- ⑤ A-Power Source Main Circuit Terminal
- ⑥ Auxiliary Switch
- ⑦ Manual Handle



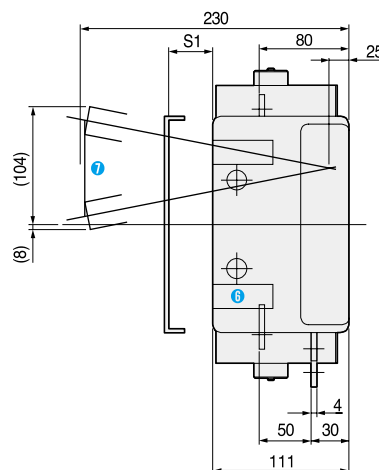
Arc space size (S1) is 30 mm when the main circuit voltage is 220V and 60 mm when it is 600V.

Type	A	B
2P	210.8	199.8
3P	240.8	229.8
4P	270.8	259.8

CTTS Type 200A Front connection



- ① Manual Operation Hole
- ② Switch Display
- ③ B-Power Source Main Circuit Terminal
- ④ Load Part Main Circuit Terminal
- ⑤ A-Power Source Main Circuit Terminal
- ⑥ Auxiliary Switch
- ⑦ Manual Handle

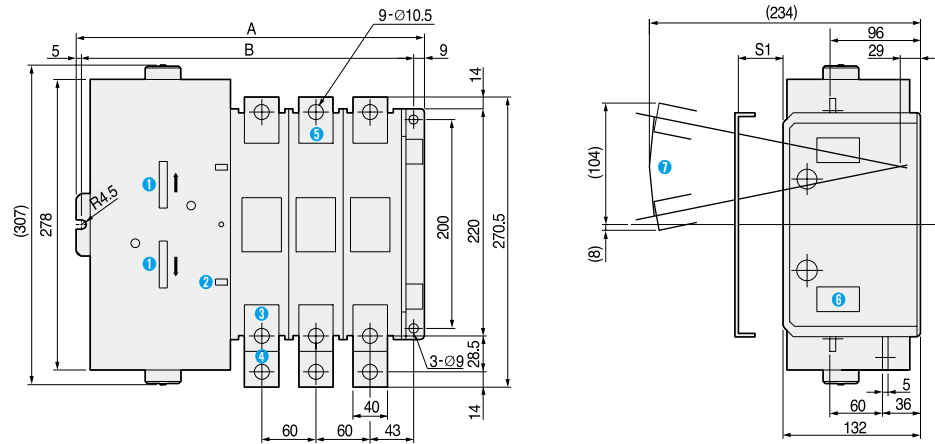


Arc space size (S1) is 30 mm when the main circuit voltage is 220V and 60 mm when it is 600V.

Type	A	B
2P	240.8	229.8
3P	285.8	274.8
4P	330.8	319.8

Low Voltage
Automatic
Transfer Switch
ATS, CTTS

CTTS Type 400A Front connection

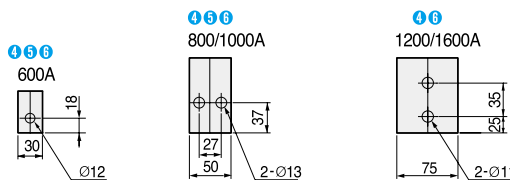
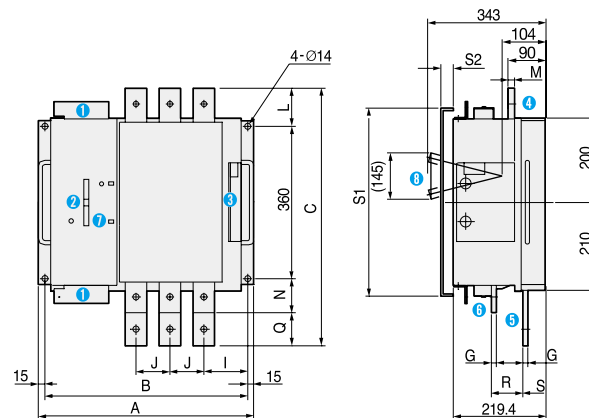


- ❶ Manual Operation Hole
- ❷ Switch Display
- ❸ B-Power Source Main Circuit Terminal
- ❹ Load Part Main Circuit Terminal
- ❺ A-Power Source Main Circuit Terminal
- ❻ Auxiliary Switch
- ❼ Manual Handle

Arc space size (S1) is 30 mm when the main circuit voltage is 220V and 60 mm when it is 600V.

Type	A	B
2P	292.5	278.5
3P	352.5	338.5
4P	412.5	398.5

CTTS Type 600A~1600A Front connection



- ❶ Operating Circuit Terminal
- ❷ Manual Operation Hole
- ❸ Auxiliary Switch
- ❹ A-Power Source Main Circuit Terminal
- ❺ Load Part Main Circuit Terminal
- ❻ B-Power Source Main Circuit Terminal
- ❼ Switch Display
- ❽ Manual Handle

Arc space Size

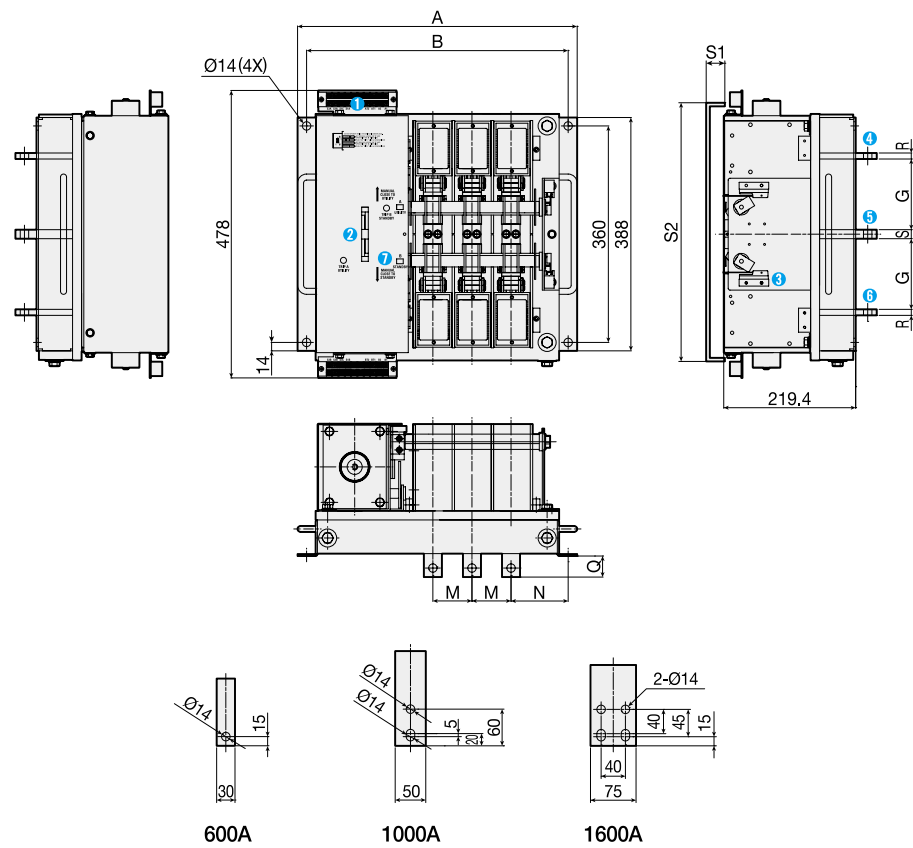
Main Circuit Voltage	S1	S2
200V	430mm	25mm
600V	450mm	90mm

Type	600A	800A	1000A	1200A	1600A
A	3P 465	510		570	
	4P 530	590		670	
B	3P 435	480		540	
	4P 500	560		640	
C	545	607		644	
G	10	12		15	
I	95	103		112.5	
J	65	80		100	
L	70	90		109	
M	15	15		15	
N	71	79		109	
Q	44	79		66	
R	75	75		75	
S	55	55		55	

External Sizes

Low Voltage
Automatic
Transfer Switch
ATS, CTTS

CTTS Type 600A~1600A Front connection



- ① Operating Circuit Terminal
- ② Manual Operation Hole
- ③ Auxiliary Switch
- ④ A-Power Source Main Circuit Terminal
- ⑤ Load Part Main Circuit Terminal
- ⑥ B-Power Source Main Circuit Terminal
- ⑦ Switch Display

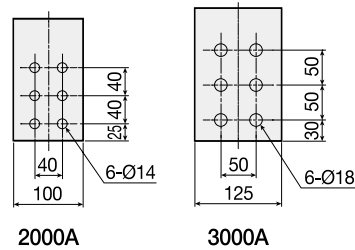
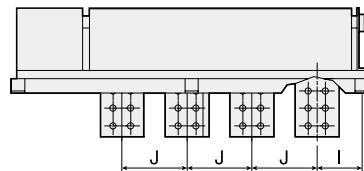
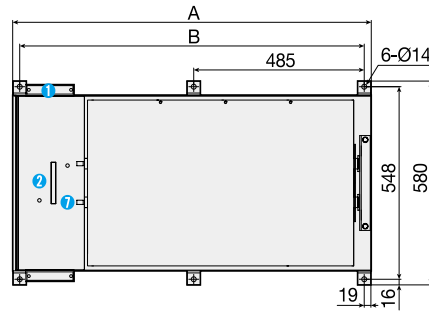
Arc space Size

Main Circuit Voltage		S1	S2
200V		26	430
600V		90	450

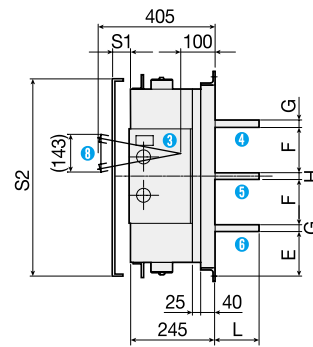
Type		600A	1000A	1600A
A	3P	465	510	570
	4P	530	590	670
B	3P	435	480	540
	4P	500	560	640
G		117.5	116.5	116.5
M		65	80	100
N		95	103	112.5
Q		35	80	80
R		10	15	15
S		15	15	15

Low Voltage
Automatic
Transfer Switch
ATS, CTTS

CTTS Type 2000A~3200A Front connection



- ① Operating Circuit Terminal
- ② Manual Operation Hole
- ③ Auxiliary Switch
- ④ A-Power Source Main Circuit Terminal
- ⑤ Load Part Main Circuit Terminal
- ⑥ B-Power Source Main Circuit Terminal
- ⑦ Switch Display
- ⑧ Manual Handle



Arc space Size

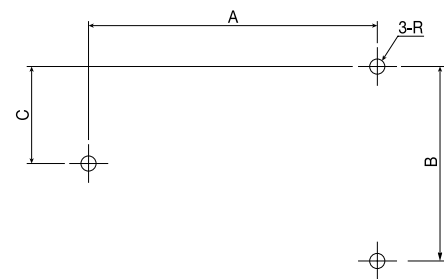
Main Circuit Voltage	S1	S2
200V	50	560
600V	100	600

Type	2000A	3000A
A	3P 683	835
	4P 820	1020
B	3P 645	795
	4P 780	980
E	119	114
F	132.5	130
G	15	20
H	15	20
I	103	128
J	135	185
L	90	125

External Sizes

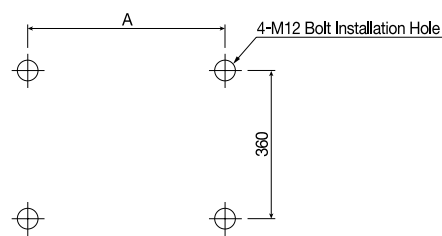
Panel Processing Dimensions

61-64CT Front connection



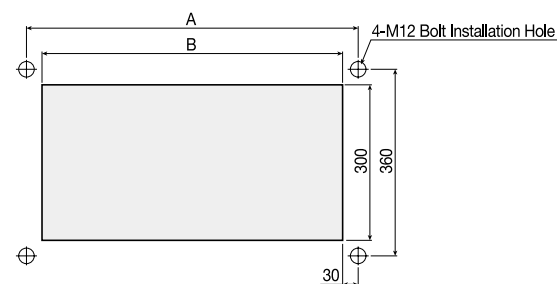
Type	100A	200A	400A
A	2P	199.8	229.8
	3P	229.8	274.8
	4P	259.8	319.8
B	152		200
C	76		100
R	M5		M8

66-616CT Front connection



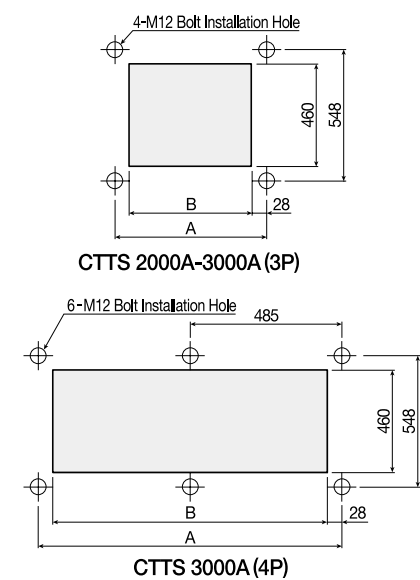
Type	600A	800A	1000A	1200A	1600A
A	3P	435	480	540	
	4P	500	560	640	

66-616CT Back connection

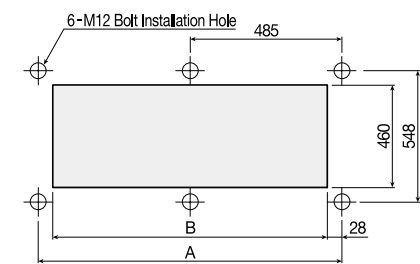


Type	600A	800A	1000A	1200A	1600A
A	3P	435	480	540	
	4P	500	560	640	
B	3P	375	420	480	
	4P	440	500	580	

620-630CT Back connection



CTTS 2000A-3000A (3P)



CTTS 3000A (4P)

Type	2000A	3000A
A	3P	645
	4P	780
B	3P	420
	4P	555

VITZRO EM

