

Low-Voltage Equipment

Product Catalog

Automatic Transfer Switches



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 MMSG 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, 8kA and 12.5kA 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 5kA in 1998 (Polymer Rubber Type), developed VCB 25.8kV, 31.5kA, 38kA and 40kA 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 25kA/15kV 1200A 25kA 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 30/50/65kA), 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.

Products Guide

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



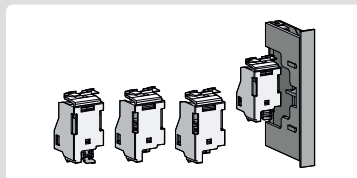
Miniature Circuit Breakers

- 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 C37.05 / 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

MV Equipment



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

A6 Automatic Transfer Switches

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Internal Accessories

Automatic Transfer Switches 100~3200A

Innovative convenience and ergonomics are adopted.

It is also a premium product that delivers user-centric reliability while delivering the best solution for a wide range of customer environments with world-class reliability.

Certificate & Approval

- It is a product applied with the accumulated switch design and application technologies, operating machine design technology and insulation design technology.
- It is a product with the largest short circuit capacity and applied with the international standards IEC60947-3 (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 both-way breaking capacity.

It is possible to install a 1000 mm panel board for all types through an optimal reduction of exterior structure

- Standard type up to 73% less cosmetic. / Economic type up to 48% less external.
- 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 provides safety

- Transparent insulation cover for access terminals enhances insulation performance against ingress of foreign material and improves operator safety.
- A sealed structure with fully molded insulation to maximize 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.
- It stressed harmony with the surrounding equipment with wired external structure.



It is easy to carry out maintenance and designed in a safe structure

- It is easy to attach/detach the insulation cover of the front part so that it is easy to identify the structural health of the breaking part and connecting terminal part.
- It is easy to check the switching performance and main contact state through a simple, removable Arc Shute structure.
- The operational part is protected by a steel cover and the structural health of solenoid can be checked by a simple removable.

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 device lifespan.
- Short arc time and low contact consumption during opening and closing causes semi-permanent life.
- The open operation by means of separate breaking springs 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 function enables low-arcing arc production for longer product life.

Compact design for customers makes it convenient

- The volume sensitive shape user friendly image was inventoried and the whole curve was applied to create innovation with a simple, beautiful and progressive product image.
- Confidence is emphasized by the clean shape-clearing and well-cleaned adoption of the cable.
- Products in the panel are clear and arranged with clear color application.

Ratings

Standard ATS WN Types

100A ~ 3200A



New 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 structure for the transfer mode.

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 power consumption. The contact pressure is protected 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

Various Products

There are various products with the rated voltage and current up to 600V, 100-3000A and they are molded in a dust-proof structure. DC load switch is also possible.

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		61WN	62WN	64WN							
Rated Current(I _n)	A	100	200	400							
Rated Voltage(U _e)	V	AC600	AC600	AC600							
Rated Insulation Voltage(U _i)	V	AC800	AC800	AC800							
Rated Impulse Voltage(U _{imp})	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							
Switch Capacity ^{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	≤55	≤55	≤55						
	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	8	8	8	
	AC 220V	A	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	192	192	192	192	192	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	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] Switching Capacity : AC-33B :

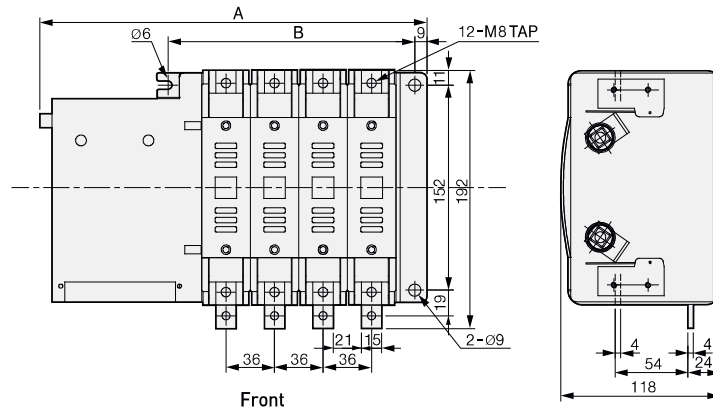
Overcurrent Switching Performance (Closing 10×I_e, Breaking 10×I_e, Cosφ = 0.35),
Rated Load Switching Performance (Closing 1×I_e, Breaking 1×I_e, Cosφ = 0.8

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

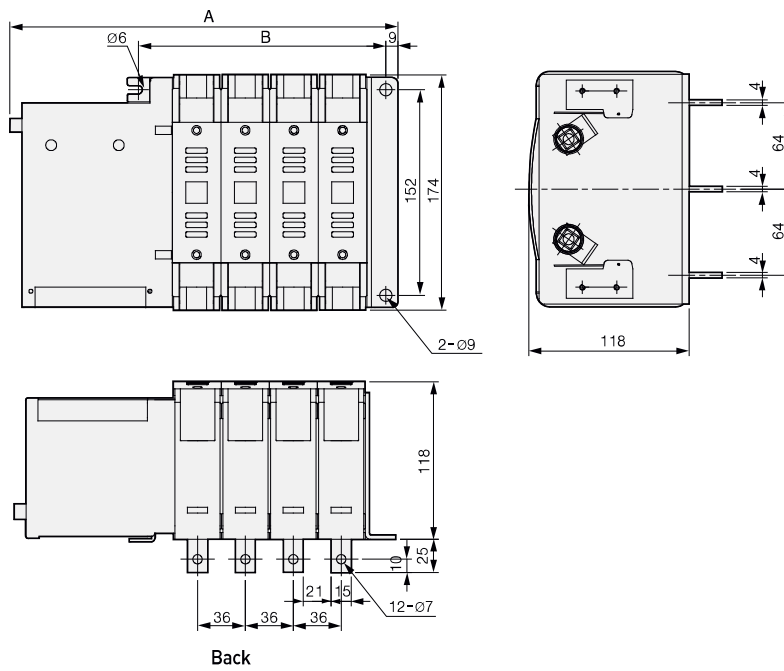
External Sizes

Low Voltage
Automatic
Transfer Switch
ATS

WN Types 61WN~62WN (100A - 200A)



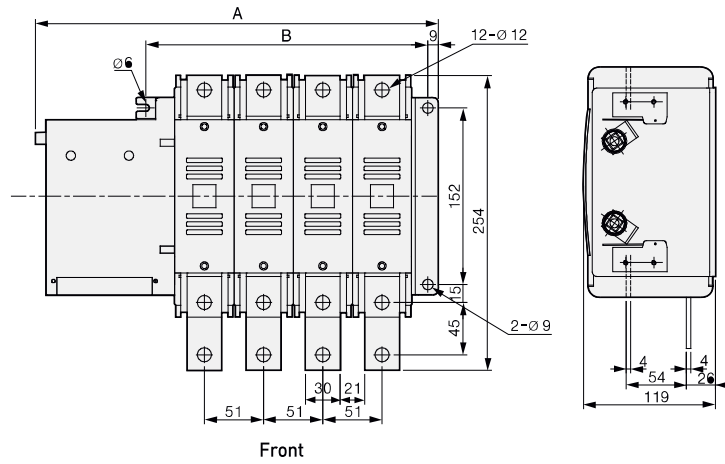
Type	A	B
2P	215	111
3P	251	147
4P	287	183



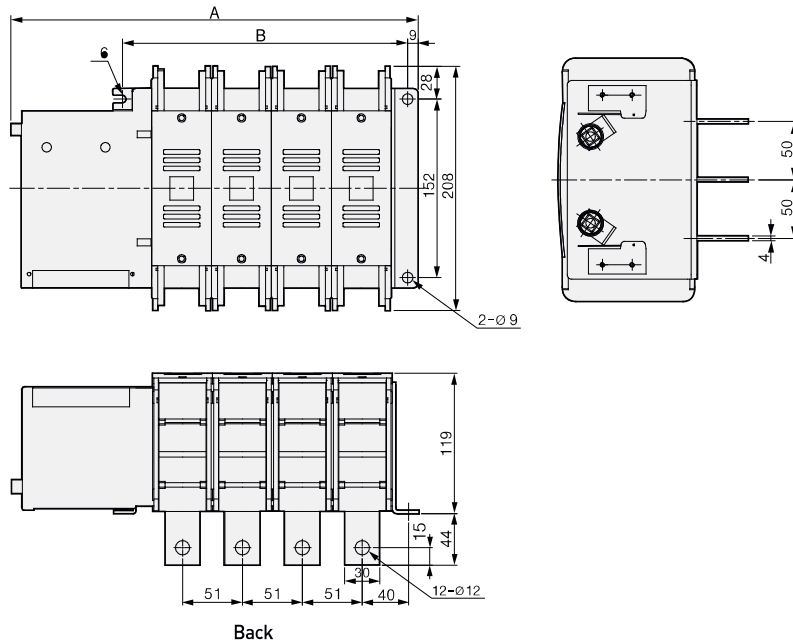
Type	A	B
2P	215	111
3P	251	147
4P	287	183

Low Voltage
Automatic
Transfer Switch
ATS

WN Type 64WN (400A)



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

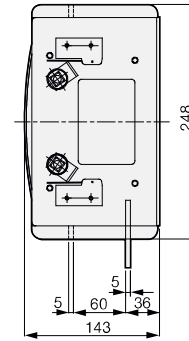
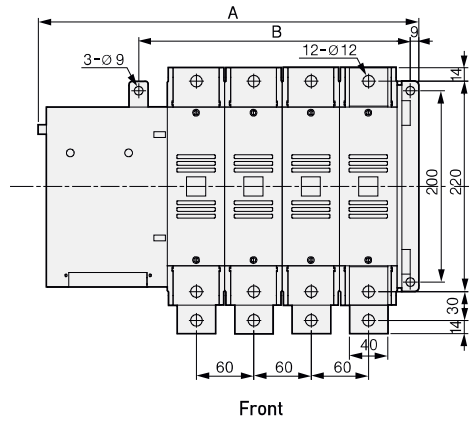


Type	A	B
2P	245	141
3P	296	192
4P	347	243

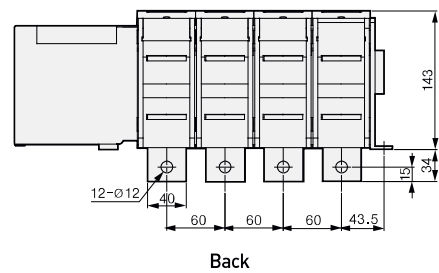
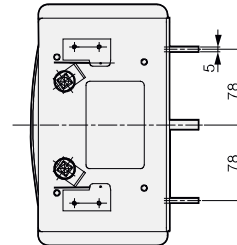
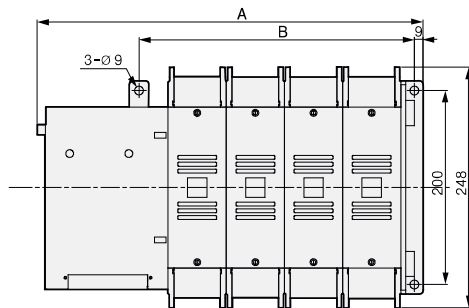
External Sizes

Low Voltage
Automatic
Transfer Switch
ATS

WN Type 66WN (600A)



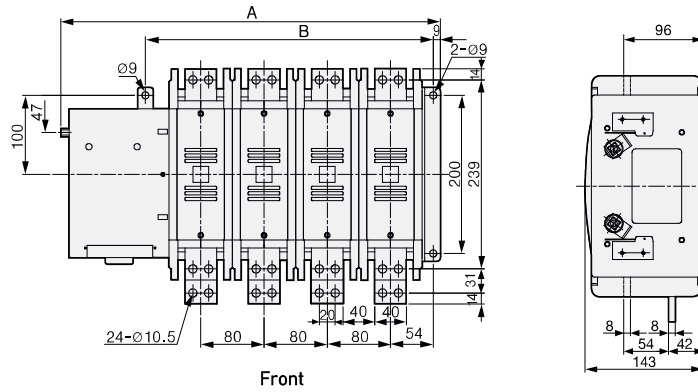
Type	A	B
3P	340	224
4P	400	284



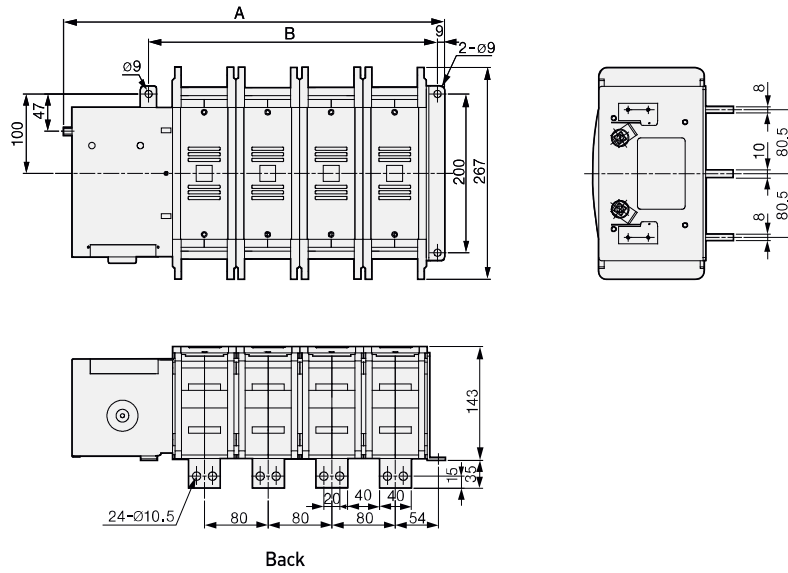
Type	A	B
3P	340	224
4P	400	284

Low Voltage
Automatic
Transfer Switch
ATS

WN Type 68WN (800A)



Type	A	B
3P	400	284
4P	480	364

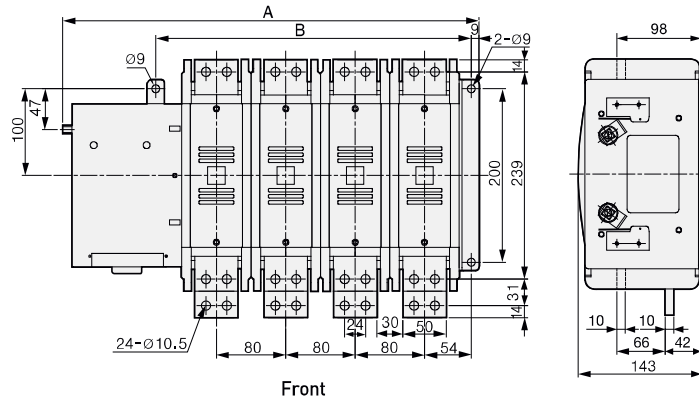


Type	A	B
3P	400	284
4P	480	364

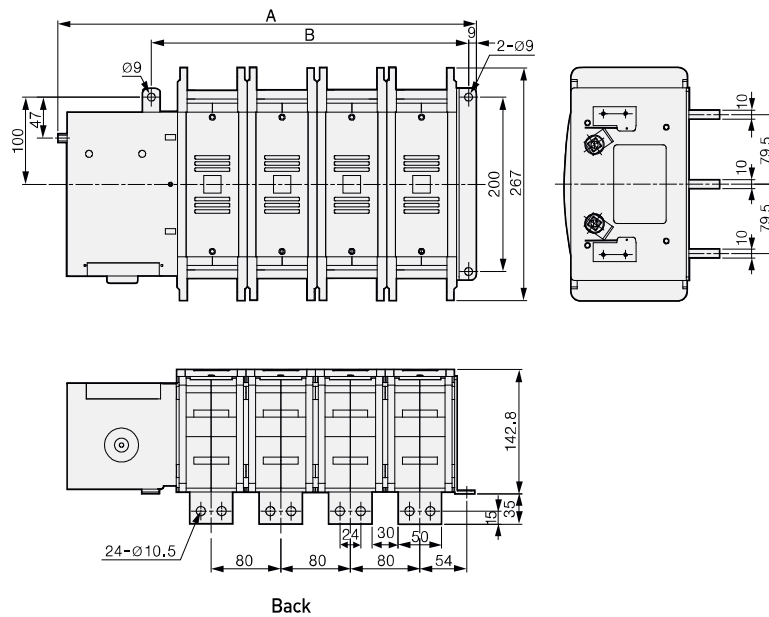
External Sizes

Low Voltage
Automatic
Transfer Switch
ATS

WN Type 610WN (1000A)



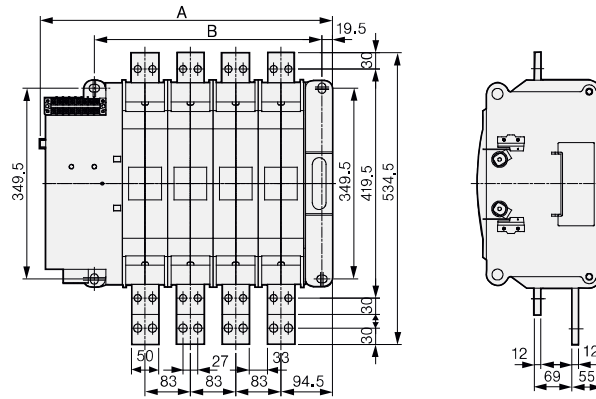
Type	A	B
3P	400	284
4P	480	364



Type	A	B
3P	400	284
4P	480	364

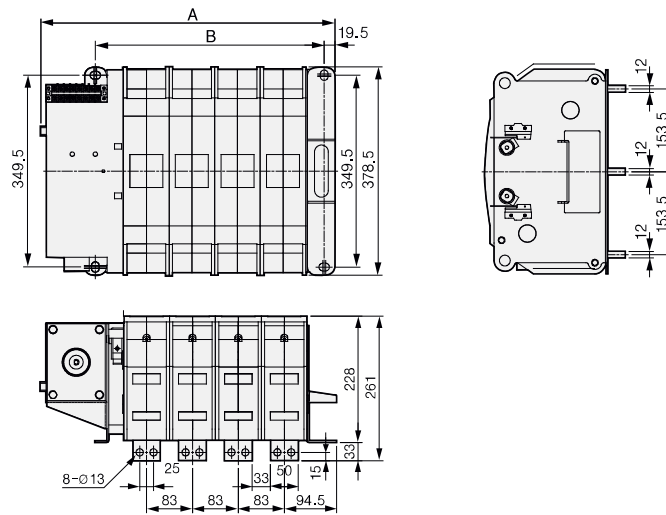
Low Voltage
Automatic
Transfer Switch
ATS

WN Type 612WN (1200A)



Front

Type	A	B
3P	452,5	334
4P	535,5	417



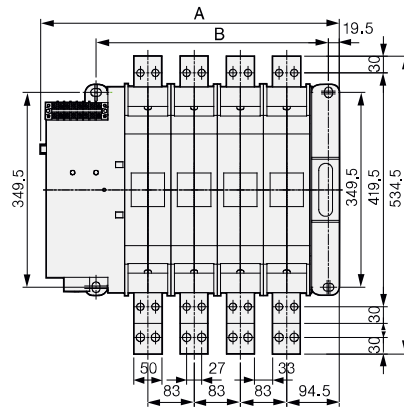
Back

Type	A	B
3P	452,5	334
4P	535,5	417

External Sizes

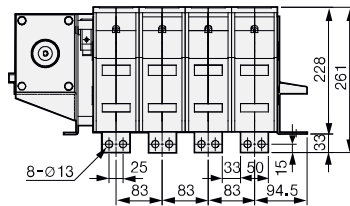
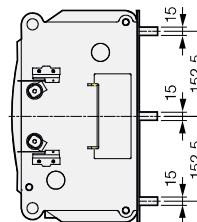
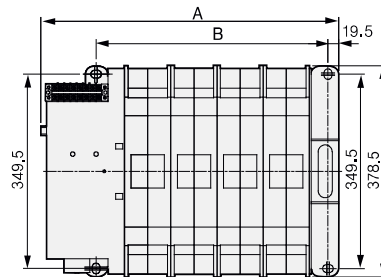
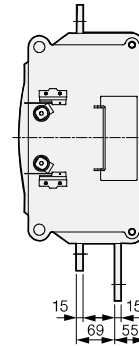
Low Voltage
Automatic
Transfer Switch
ATS

WN Type 616WN (1600A)



Front

Type	A	B
3P	452,5	334
4P	535,5	417

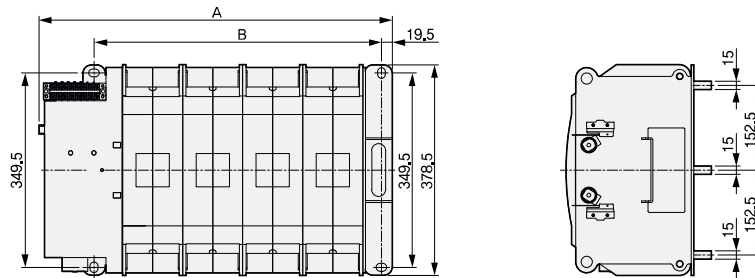


Back

Type	A	B
3P	452,5	334
4P	535,5	417

Low Voltage Automatic Transfer Switch ATS

WN Type 620WN (2000A)

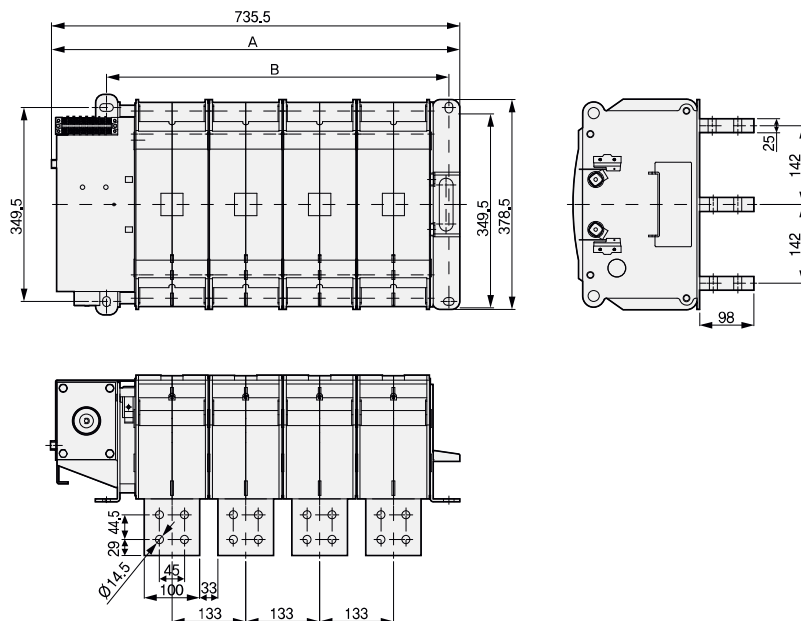


Back

Type	A	B
3P	527,5	409
4P	635,5	517

Low Voltage Automatic Transfer Switch ATS

WN Types 625~630WN (2500A - 3200A)



Type	A	B
3P	602,5	484
4P	735,5	617