U-Series

High voltage vacuum contactors

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FEATURES

Easy fuse replacement

- By using spring-pressured fuse clip which bolt fastening is not required, it is easy to replace fuses once DIN type fuse is used.

Automatic position interlock system

- When draw in/out button is pushed, interlock works automatically in the test or connected position.

  So the operator does not need to lift up the interlock pin or keep pushing the button during draw in/out operation.

Anti-pumping function

- Anti-pumping circuit is installed in controller which operates closing and opening just 1 time once the signals for closing and opening are inputted at the same time.

Free voltage of control power

- AC/DC 100 – 125V, AC/DC 200 – 230V coverage provided for control power.
- Controller which is used with above 2 ranges is compatible.

Noiseless

- Adopting solenoid coil magnetization type which is using PWM(Pulse Width Modulation) control, U-series vacuum contactor doesn't make noise.

Reducing current consumption

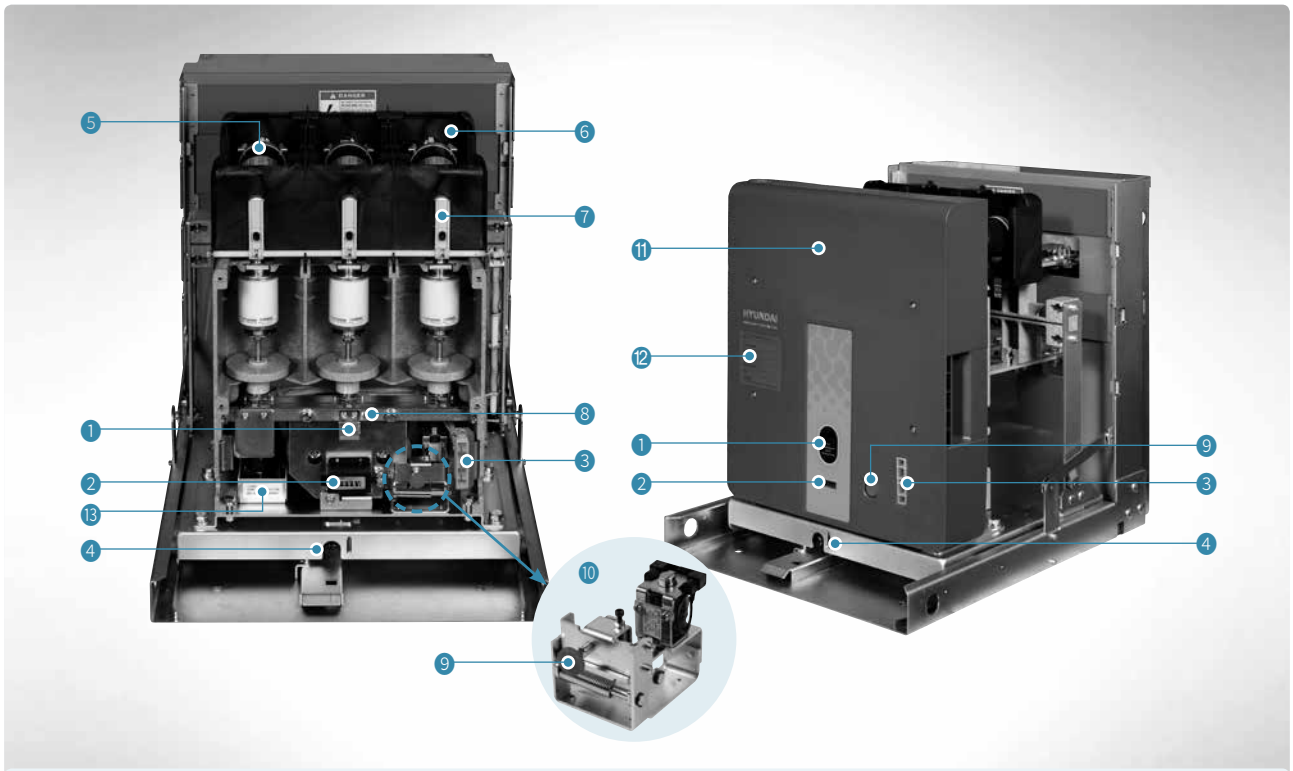
- Controlling current by PWM type, power consumption is reduced by 60% compared with previous model.

International standard & certificate

- U-Series vacuum contactor is developed based on IEC and NEMA standard.
- By achieving UL and cUL certificate following UL347, it is applicable to the United States and CANADA market.

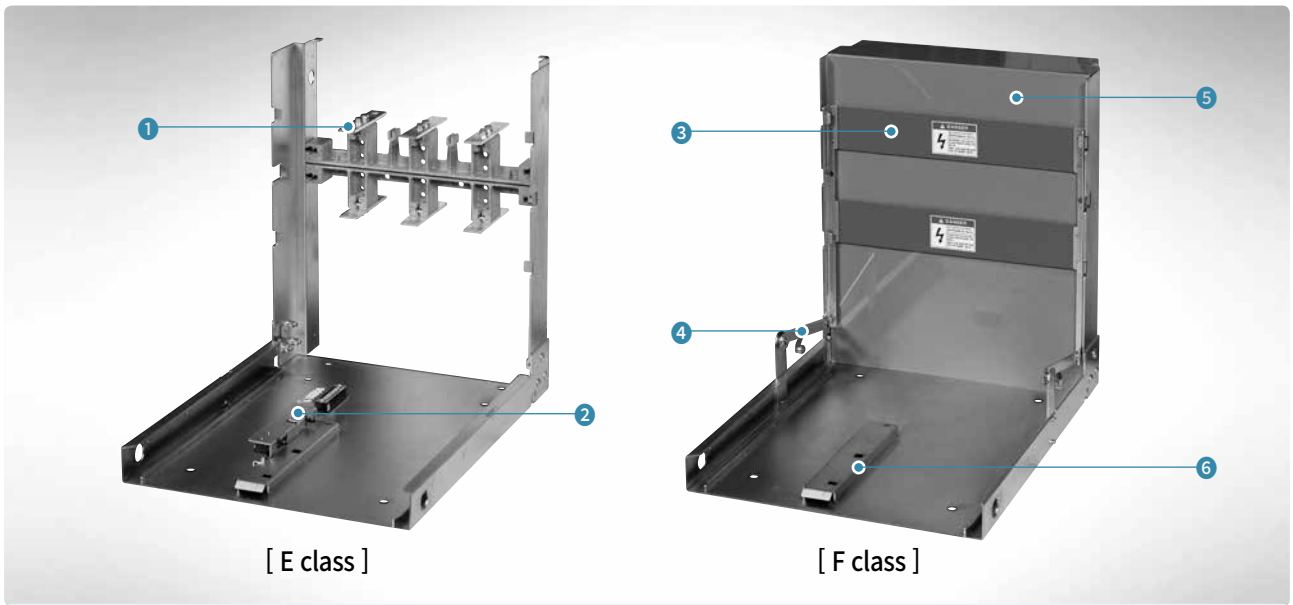
STRUCTURE

Body



1. ON/OFF Indicator
2. Counter
3. Control plug
4. Draw in/out button
5. Fuse
6. Fuse Holder
7. Fuse melting detector (optional)
8. Manual checking hole
9. Emergency trip button (for Latched type)
10. Latch device(for Latched type)
11. Front cover
12. Name plate
13. Controller

Cradle



[E class] [F class]

1. Cradle Terminal
2. Position switch
3. Shutter
4. Shutter Lifter
5. Rear Barrier
6. Interlock supporter

RATINGS

Standard

- UL347
- NEMA ICS 3

Certificate

- UL
- cUL
- KAS V-check
- Gost-R 50030.4.1-2002

General characteristics \ Type		Fixed				Withdrawable			
		X1 without fuse holder A1 A2 A3 with fuse holder				B1 B2 without fuse holder D1 D2 D3 D4 D5 D6 with fuse holder			
Operation mechanism	Continuously energized	UVC32C☐	UVC34C☐	UVC62C☐	UVC64C☐	UVC32C☐	UVC34C☐	UVC62C☐	UVC64C☐
	Latched	UVC32L☐	UVC34L☐	UVC62L☐	UVC64L☐	UVC32L☐	UVC34L☐	UVC62L☐	UVC64L☐
Rated insulation voltage(kV)		3.6		7.2		3.6		7.2	
Rated operation voltage(kV)		3.3		6.6		3.3		6.6	
Rated frequency(Hz)		50/60							
Rated current(A)		200	400	200	400	200	400	200	400
Impulse(kV)		60							
Power frequency withstand voltage(1min, kV)		20							
Control circuit dielectric strength(1min, kV)		2							
Utilization category		AC 3							
Breaking capacity (O-3min-CO-3min-CO)(kA)		4(50MVA@ 7.2kV)							
Short-time current(kA)	1sec	6.3							
	30sec	3							
Life time	Mechanical	1,000,000							
	Electrical	300,000							
Control voltage(V)		AC/DC 100~125V, AC/DC 220~230V							
Auxiliary contract		3a2b							
Applicable load capacity	Motor(kW)	750	1,500	1,500	3,000	750	1,500	1,500	3,000
	Transformer(kVA)	1,000	2,000	2,000	4,000	1,000	2,000	2,000	4,000
	Condenser(kVAR)	750	1,200	1,500	2,000	750	1,200	1,500	2,000
Weight (kg)		X1 19				B1 B2 35			
		A1 A2 28				D1 D2 D3 D5 38			
		A3 33				D4 D6 43			

TECHNICAL DATA

Operation and Application

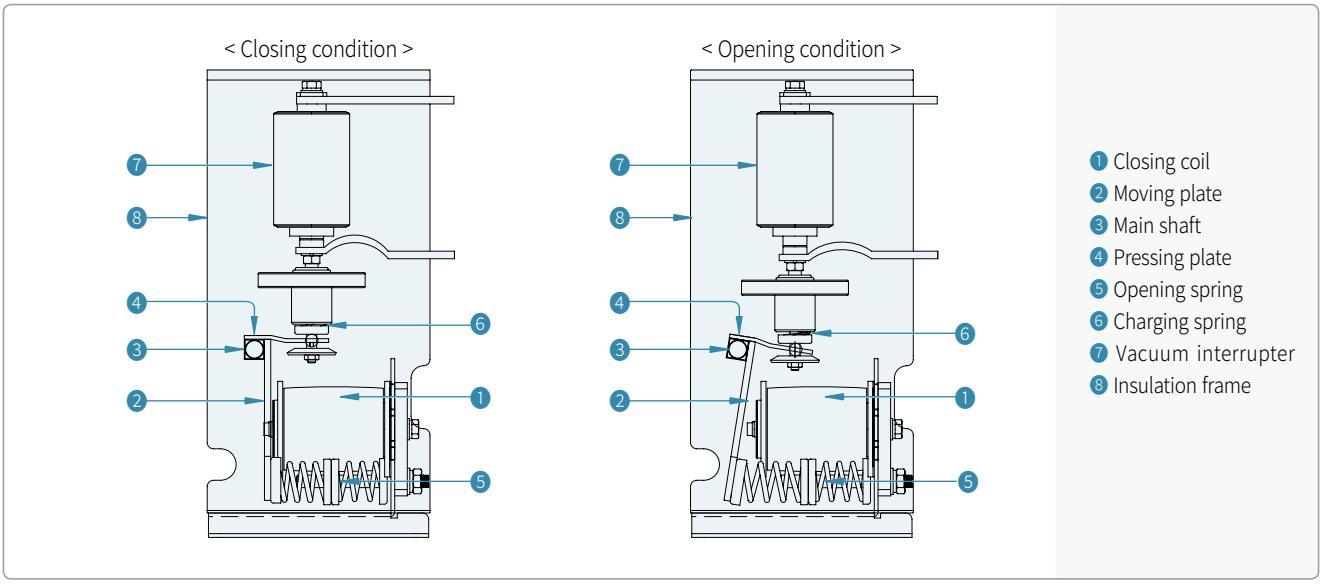
■ Continuously Energized Type

- Having longer mechanical life time than a latched type, more suitable for frequent switching.
- When the transformer for controlling power fails to supply power due to accidents, continuously energized type protects the loads by tripping automatically.

■ Latched Type

- Latched type keeps the closing condition without the supply of power, so it is suitable for the system which has unstable power or the load which requires automatic closing with power.
- With the separate tripping circuit, DC control voltage is recommended for stable power supply. When AC control voltage is used, the CTD(condenser trip device) should be installed.

Closing & Opening Operation



■ Closing mechanism

▶ When the closing coil(❶) is magnetized by closing operation, it pulls the moving plate(❷) and the opening spring(❺) is compressed. And the Vacuum contactor is changed to the closed position by lifting up the moving part of the charging spring(❻) and the vacuum interrupter(❼) through pressing plate (❹) which is supported by the main shaft(❸).

▶ Continuously energized type : When the contactor is closed, controller automatically reduces the current which is supplied to the closing coil(❶).

▶ Latched type : When the contactor is closed, the latch device which is installed in the lower part of body holds the moving plate(❷) mechanically and maintains the contactor to the closed position. Then the control power is removed automatically from controller.

■ Opening mechanism

▶ Continuously energized type : When the control power of closing coil(❶) is off, the closing coil(❶) is demagnetized and the contactor is opened by released opening spring(❺) which was compressed.

▶ Latched type : When opening coil's power is on, the latch device which is holding moving plate(❷) is released then the contactor is opened by released opening spring(❺) which was compressed.

▶ Even a power failure condition, operator can open the contactor by manual open button or condenser trip device(CTD) which is installed in Latched type contactor.

▶ Once main power is on, drawing out the contactor is not possible by interlock device which is for operator's safety so please draw out the contactor after open it.

Operating time and current

Case		Closing current(A)	Holding Current(A)	Opening Current(A)	Closing time(ms)	Opening time(ms)
Continuously energized	AC/DC100~125V	3.0	0.5	-	Max 110	Max 40
	AC/DC200~230V	3.0				
Latched	AC/DC100~125V	3.0	-	4.0	Max 110	Max 25
	AC/DC200~230V	3.0				

※ Latched type's closing current is maintained for Max 170ms.

Control voltage

Closing	85-110% of rated voltage
Opening	70-110% of rated voltage
Drop out voltage	AC/DC 25V

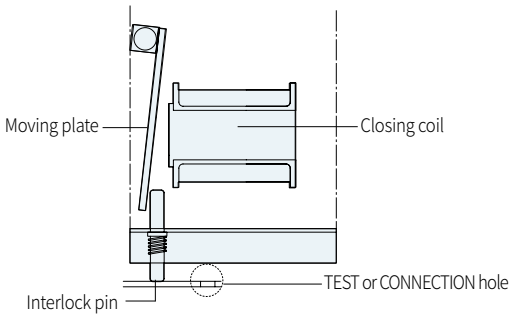
Ratings for auxiliary contact

Voltage	AC110V	AC220V
Operation current	5A	2A

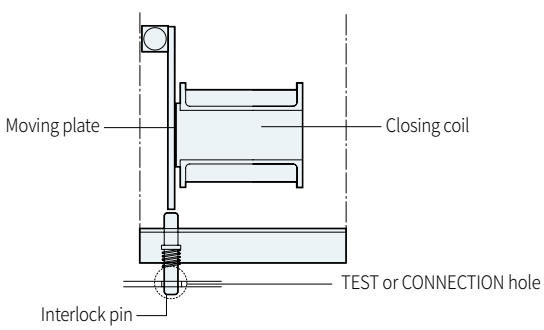
Interlock Principle

Case		Principle	To release
When the contactor is closed.	it cannot be drawn-in/out to connection position	The interlock pin of the body which is inserted in the test or connection hole of cradle mechanically protects the body from any movement.	Open the contactor.
	it cannot be drawn-out from connection position to test position		
When the body is in the incorrect position, it cannot be closed.		The interlock pin of the body mechanically protects the body from any movement.	Move the body to the correct position and close it.
		Electrical interlock(option):The auxiliary switch cuts off the control power when the contactor is in the incorrenct position.	
The body stops unconditionally in the test position.		The interlock pin of the body is inserted in the test hole of the cradle and mechanically fix the body.	Push the draw in/out button.

Incorrect position



Test & Connection position



TECHNICAL DATA

Fuse Selection

Because Hyundai Electric does not produce fuses, we recommend you to select the fuse with fuse maker's catalogue and apply to our contactors. Below selection chart is made for reference by fuse maker's standard, final selection of fuse must be done with maker's catalogue.

With Fuse Holder Type

- Fuse only cut off short-circuit current which is over the breaking capacity of contactor. For over- current protection, protection relay is recommended.

- Fuse Melting Detector is an option and the user can protect the system which doesn't have protection for earth leakage and short-circuit of single phase by using it

Without Fuse Holder Type

- The breaking current of without fuse type is limited, so a circuit breaker should be installed in the upper circuit of the line side.

- In case of draw-out type, the fuse holder connection part is replaced by a bus bar. So the fuse holder can be installed under maker's instruction when it is required.

Selecting rated current

- Select rated current which is satisfying below conditions with Fuse maker's catalogue by comparing operating condition with time-current characteristic.
- Rated current must be higher than full load current.
- Fuse must be selected with enough rated current to prevent fuse element from deterioration by allowed overload.
- Select rated current of fuse which starting(Inrush) current –time characteristic is within current-allowed time characteristic to prevent fuse element from deterioration by inrush or starting current.

Selecting rated breaking current

- Select fuse which has higher rated breaking current than short circuit current.

■ **Select the value of rated current per each rated voltage through below table.**

Rated insulation voltage(kV)		3.6		7.2	
Rated operation voltage(kV)		3.3		6.6	
Rated current(A)		200	400	200	400
Maximum Load Capacity	Motor(kW)	750	1500	1500	3000
	Transformer(kVA)	1000	2000	2000	4000
	Condenser(kVAR)	750	1200	1500	2000

Safety instruction per each load

Motor

- Refer to fuse selection table and choose the right fuse to avoid damaging from motor's starting current and allowed overload.
- In case of using transformer for control power purpose, control power must not be lowered over 20% by motor's starting current.

Transformer

- Refer to fuse selection table and choose the right fuse to avoid damaging from no-load inrush current.

Capacitor

- Refer to fuse selection table and choose the right fuse to avoid damaging from inrush current.
- Please contact us and have proper installation guide if you want to use several capacitors for Back-to-Back purpose because of bad effect by high inrush current.

Fuse selection table according to load condition

This table is based on below standard

- SIBA brand fuse
- 3 phase motor : starting time is within 15 seconds and the number of starting operation is about 2 times per hour.

Load		3ø Motor(kW)				3ø Transformer(kVA)				3ø Condenser(kVAR)			
		3.3kV		6.6kV		3.3kV		6.6kV		3.3kV		6.6kV	
Fuse Maker		SIBA	LS	SIBA	LS	SIBA	LS	SIBA	LS	SIBA	LS	SIBA	LS
Fuse Rated Current(A)	6.3(5)	-	-	-	-	-	-	-	15	-	-	-	-
	10	-	-	-	-	-	15	-	30	-	10	-	25
	16	-	-	-	-	-	-	-	-	-	-	-	-
	20	-	37~75	-	75~160	50	30	100	75	30	30	60	50
	25	-	-	-	-	-	-	-	-	-	-	-	-
	31.5(30)	-	-	-	-	80	75	160	150	50	50	100	100
	40	-	-	-	-	100	100	200	200	75	75	150	150
	50	90	90~200	160	185~400	125	150	250	300	100	100	200	200
	63	100	-	200	-	160	-	315	-	125	-	250	-
	80(75)	125	-	250	-	200	200	400	500	150	150	300	400
	100	160	220~400	330	450~800	250	375	500	750	200	300	400	600
	125	200	-	400	-	315	-	630	-	250	-	500	-
	160(150)	275	450~630	550	900~1250	400	500	800	1000	300	400	650	800
	200	315	710~800	650	1500	500	750	1000	1500	375	600	750	1000
	250	400	-	830	-	630	-	1250	-	500	-	1000	-
	315(300)	500	-	1000	-	750	1000	1500	2000	600	-	1200	-
	355	600	-	1200	-	900	-	1800	-	700	-	1400	-
	2X125	-	-	-	-	-	-	-	-	-	-	-	-
	2X160	500	-	1000	-	800	-	1600	-	600	-	1200	-
	2X200	650	-	1300	-	1000	-	2000	-	750	-	1500	-
	2X250	750	-	1500	-	1250	-	2500	-	1000	-	2000	-

※ In case of using SIBA fuse for condenser, it is recommended to select rated voltage of fuse one level higher than condenser voltage.

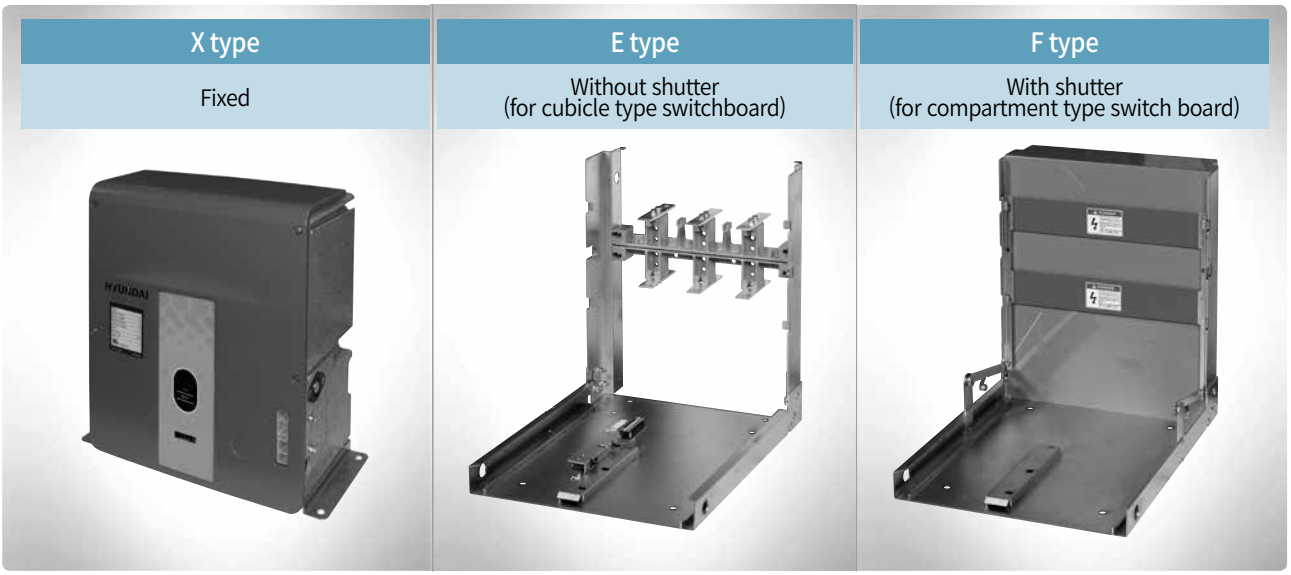
For example) - Choose 125A SIBA fuse in 3.3kV 200kW motor load
- Choose 12kV 50A SIBA fuse in 6.6kV 200kVAR condenser load because it is condenser load

TECHNICAL DATA

Cradle Selection

- U-Series vacuum contactors are divided by fixed and withdrawable type depending on its mounting structure.
- Withdrawable type has main circuit connect terminal and draw in/out mechanism which enables body part to be connected to or departed from main circuit bus part. Also it has interlock device to prevent body from any movement once contactor is closed.
- Various type of withdrawing unit can be ordered depend on switchboard's structure and withdrawing unit cradle is classified by the structure of main circuit bus part.

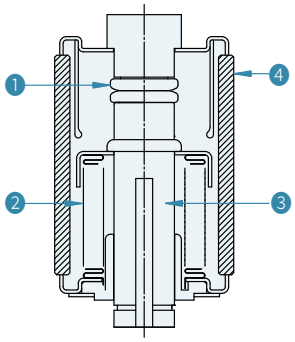
X type	E type	F type
Fixed	Without shutter (for cubicle type switchboard)	With shutter (for compartment type switch board)



※Design & Manufacturing of cradle can be customized by customer's requirement.

Vacuum Interrupter

The vacuum interrupter(VI) has the contact stem ❸, the contacts ❶, the bellows ❷, and the ceramic insulator ❹.
The contact is designed to guarantee 1 million operations and to restrain the transient recovery voltage under 1A chopping current.
Inside of VI has high vacuum degree which is under 10^{-6}[mbar]and it guarantees long life time.

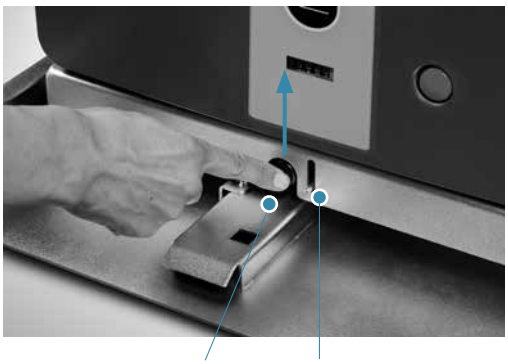


Inserting & Withdrawing instruction [E & F Cradle]

■ Inserting

Set the wheels of the contactor exactly on the guide rail of the cradle and the lifter should be used for operator's safety when the contactor is lifted.
When the contactor reaches to the test position, the interlock pin is locked in the whole of cradle and prevents body from any further movement.

If required, the user can test the internal circuit by connecting control power. Push the draw-in/out button and then insert the contactor to the connection position. If the contactor is in the correct position, the interlock pin is in the hole on the interlock support and the female contact will be inserted fully into the terminal



■ Withdrawing

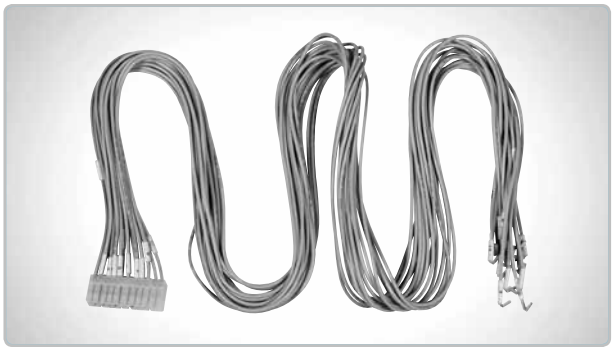
When a contactor is withdrawn, the contactor cannot be operated because of the interlock. In open condition, push the draw-out button and pull out a contactor to the test position.

ACCESSORIES

Standard

■ Control lead cable

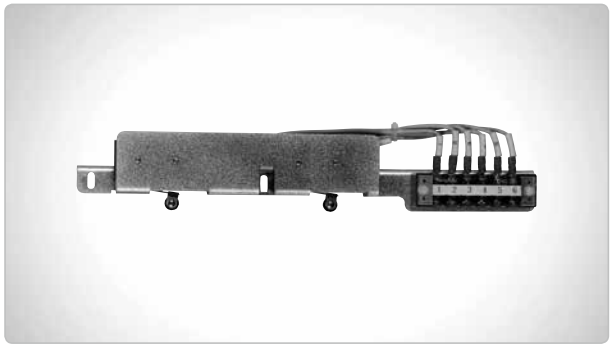
The standard length is 1.5m and SK for cable is 1.5 SQ
(blue color used)



Option

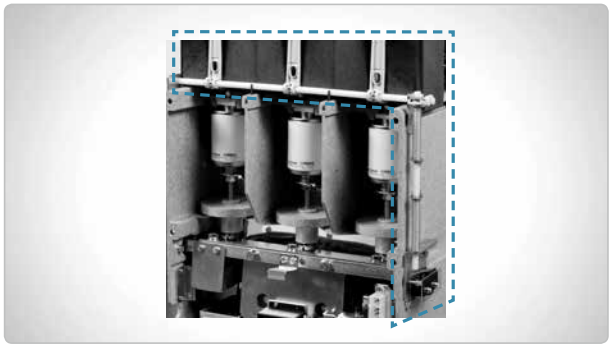
■ Position switch

The position switch indicates electrically whether the contactor is in the test or connection position and basically provides 1 piece of c contact for each position.



■ Fuse melting detector

The fuse melting detector indicates electrically whether the fuse has melting down or not. Also it is consisted of 1 piece of contact.

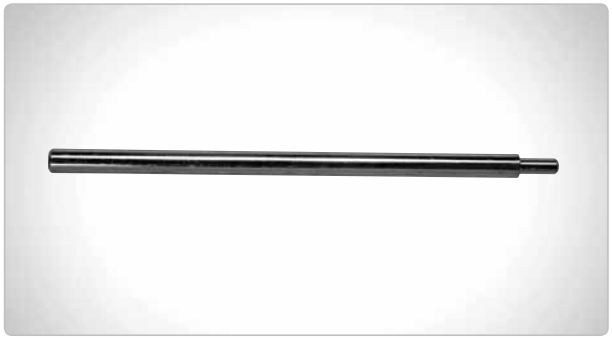


■ Potential Transformer(P.T)

P.T is used to lower the voltage power by 110V or 220V from the primary line and enables to use for vacuum contactor and other distribution devices.

■ Manual inspection handle

It is used to inspect the contactor manually after remove the front cover.



■ Electrical position interlock

Electrical position interlock is used to supply the main power in the exact position of TEST and CONNECTION only.
Mechanical interlock which is basically provided is prevent the operator from closing the contactor in incorrect position.

ACCESSORIES

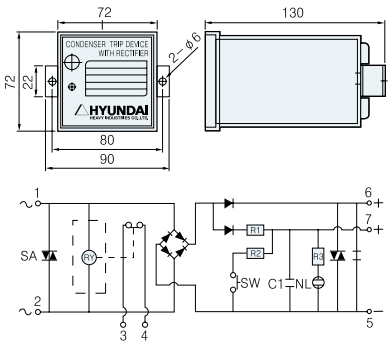
Spare Part

■ Condenser Trip Device(CTD)

Once AC control voltage is used for the purpose of control for opening, it enables opening of circuit breaker manually or automatically by using the stored power in condenser if control power cannot be supplied by accident like short-circuit(Optional).

Order code	UVCS0013	UVCS0014
Rated input voltage	AC110V	AC220V
Ordinary changing voltage	DC145V	DC290V
Ordinary current	DC2A	
Rated Frequency	50 / 60Hz	
Delay circuit time[1)]	1.5 Sec 이내	
Applied standard	IEC 60694 / KSC 4611	

※ 1) No delay model can be ordered



Input power(AC) : No.1, 2 Ordinary power : No.6(+), 5(-)
Condenser trip power : No.7(+), 5(-) Delay contact : No.3, 4

■ Vacuum checker

Opening operation in vacuum contactor is occurred in the vacuum interrupter (VI) which is completed sealed by high vacuum state, and VI's life time is over 20 years by high quality through special manufacturing process. But portable vacuum checker can be provided to check the VI or more stable usage.

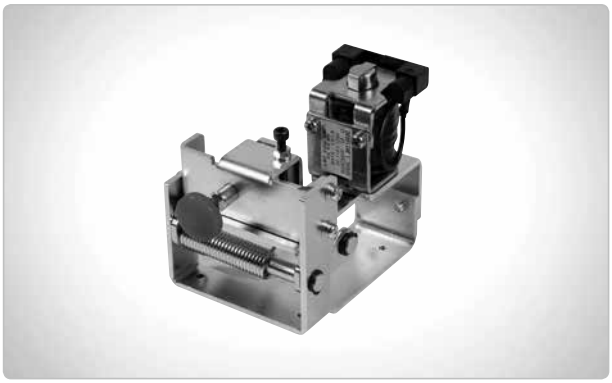
Order code	HAFS-VC9
Rated input voltage	AC200 / 220V
Rated output voltage	AC11kV / AC22kV
Weight	22kg

■ Power supply controller

The controller which provides current for the closing coil is used for both AC and DC and it is selectable for continuously energized or latched by switch.

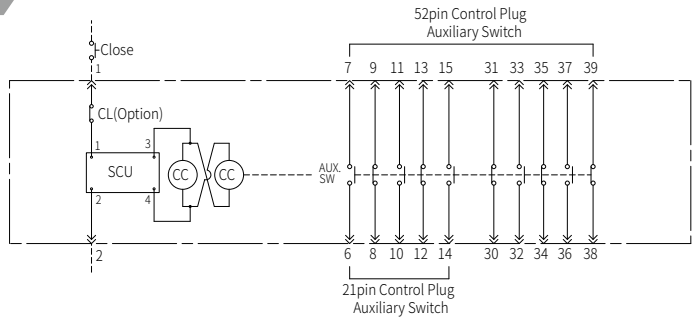
■ Latch device

It is composed of tripping coil and mechanism and only applicable to latched type.

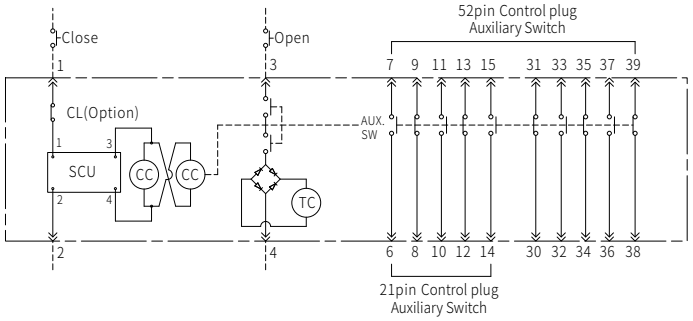


ELECTRIC CIRCUIT DIAGRAM

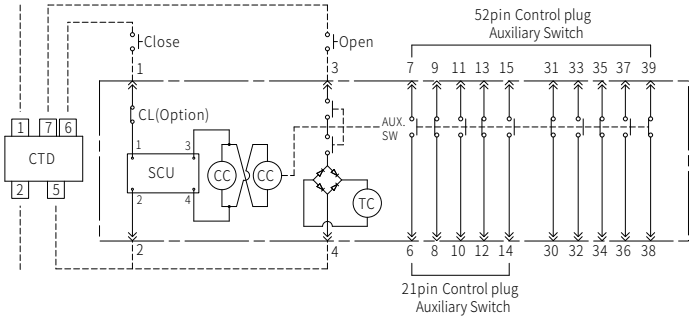
Continuously energized(3.6/7.2kV)



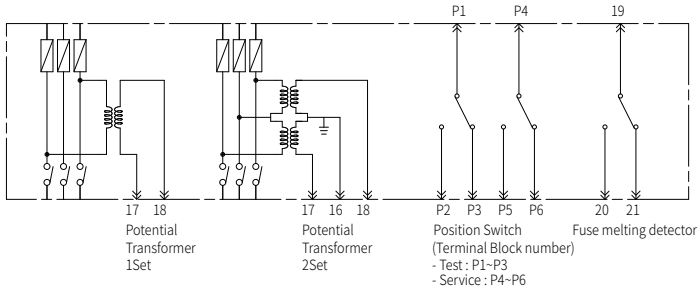
Latched(3.6/7.2kV)



Latched(with CTD) (3.6/7.2kV)



Additional option(3.6/7.2kV)

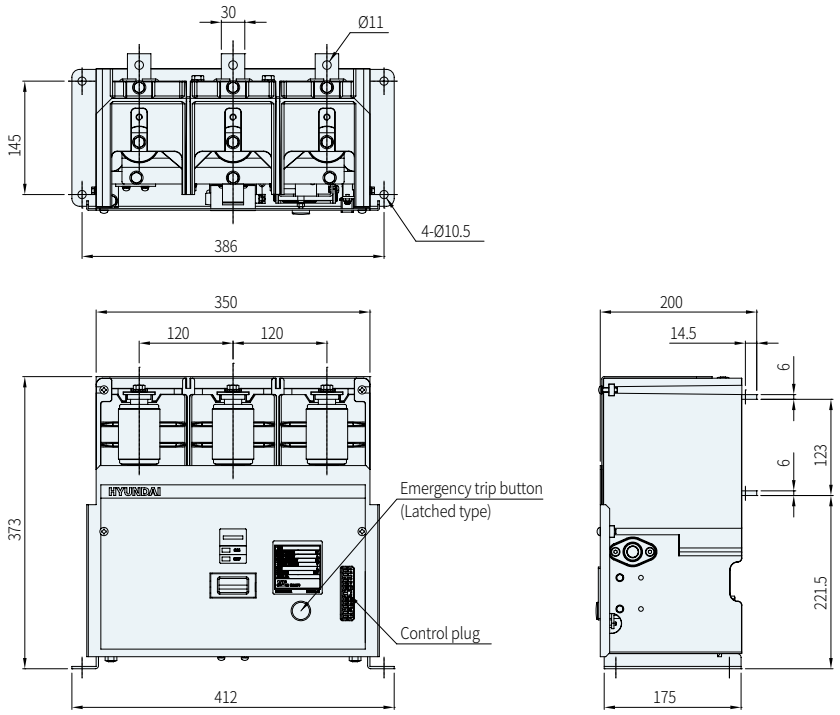


CL : Electrical interlock
CC : Closing coil
AUX, Switch : Auxiliary switch
TC : Trip coil
CTD : Condenser trip device
SCU : Source control unit

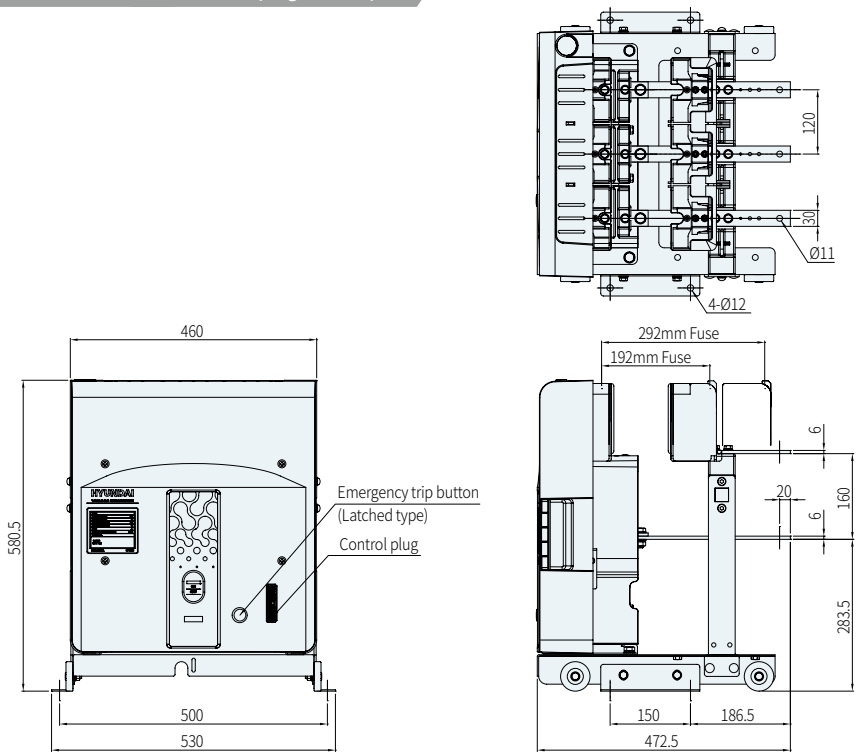
OVERALL DIMENSIONS

(Unit : mm)

3.6/7,2kV Fixed type(X1, without fuse holder, control plug with 21pin)

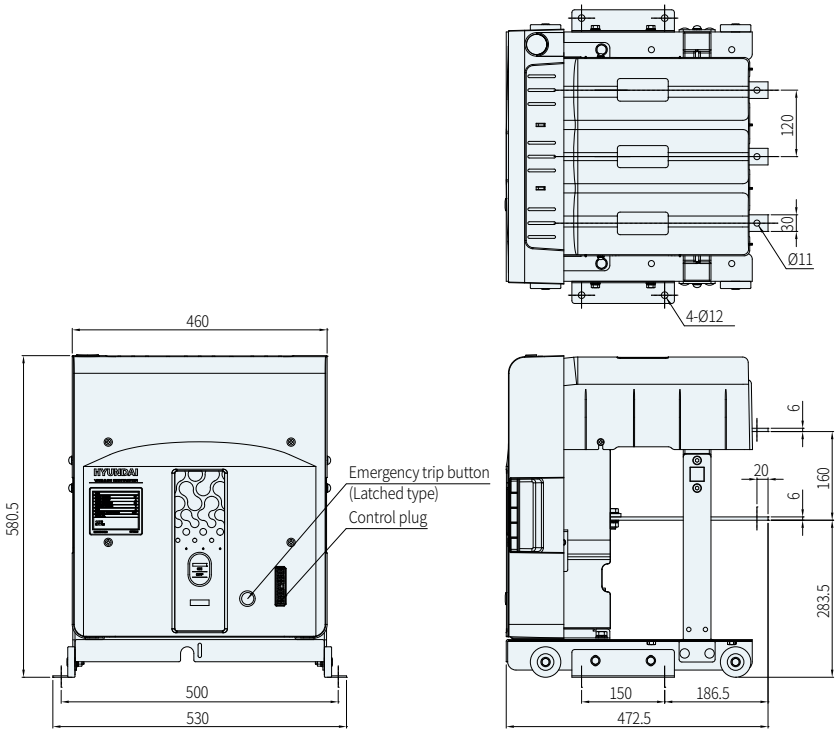


3.6/7.2kV Fixed type(A1 with DIN fuse holder, control plug with 21pin)

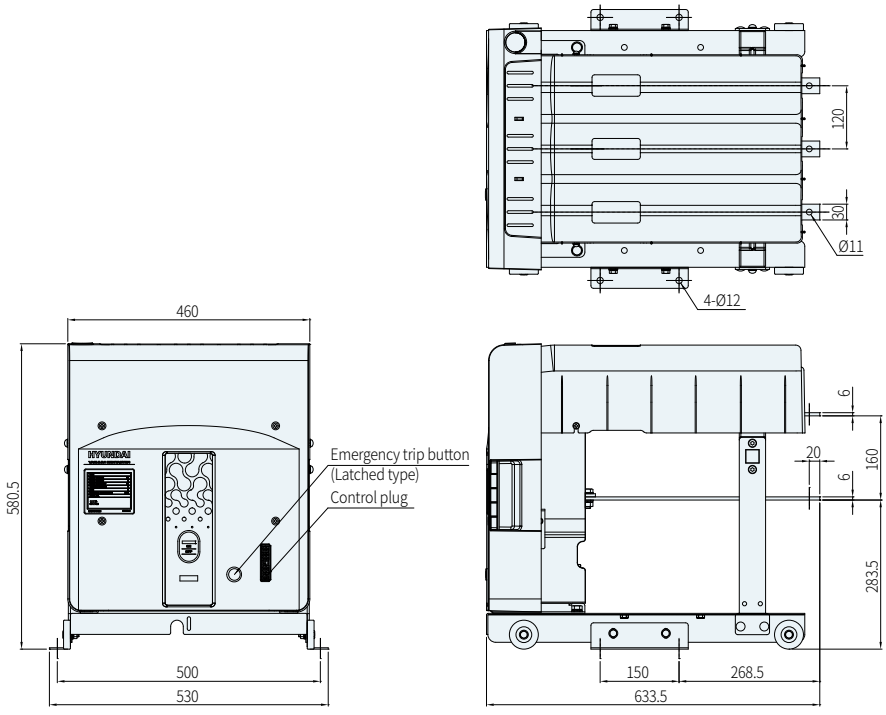


(Unit : mm)

3.6/7.2kV Fixed type(A2 with KS fuse holder, control plug with 21 pin)



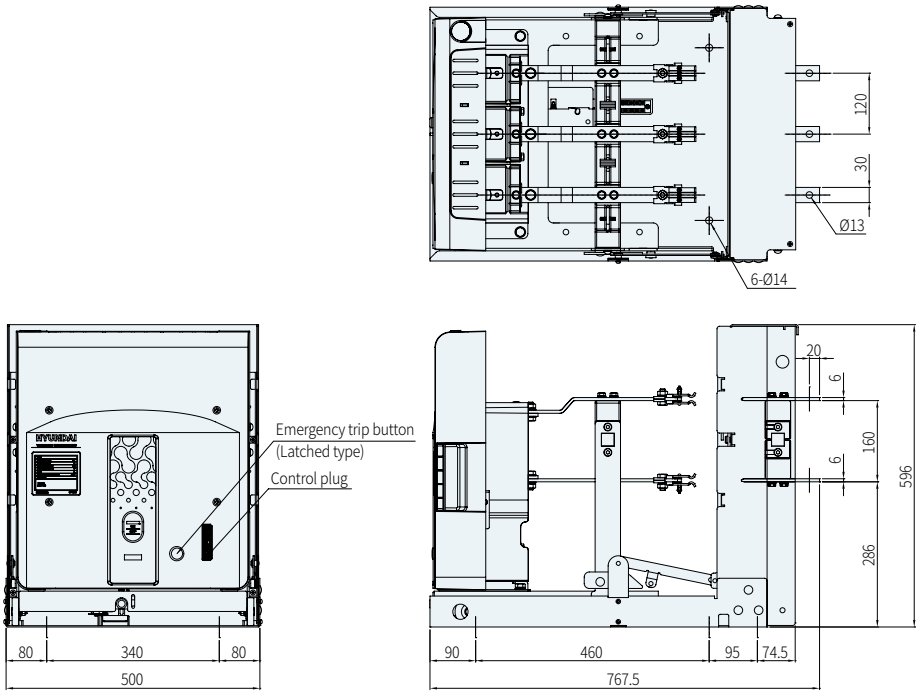
7.2kV Fixed type(A3, with KS fuse holder for 300, 400A Motor, Control plug with 21pin)



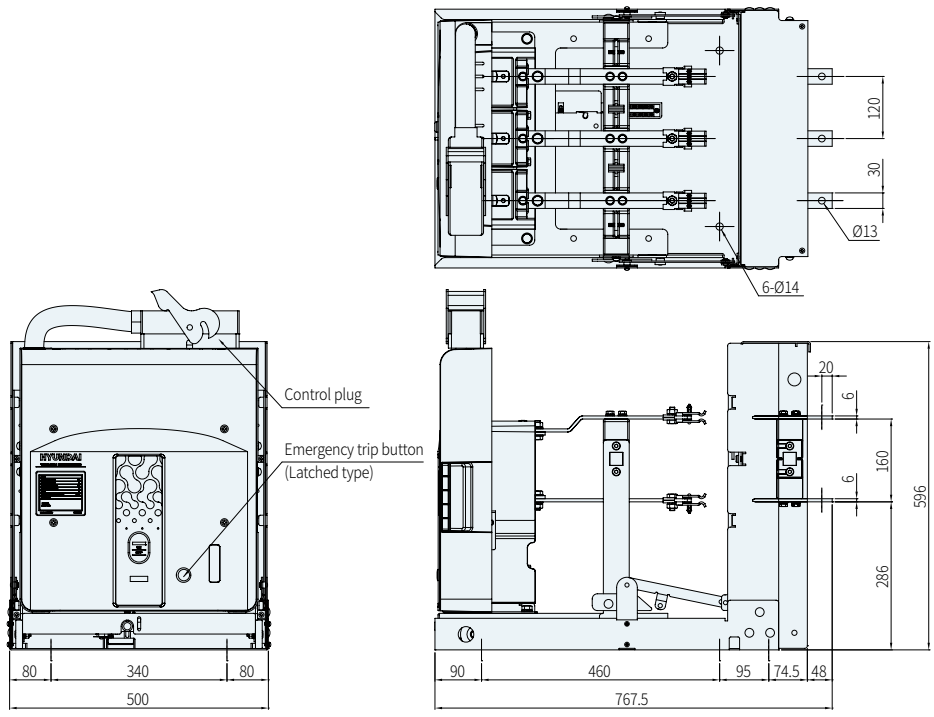
OVERALL DIMENSIONS

(Unit : mm)

3.6/7.2kV Withdrawable type, E/F cradle (B1, without Fuse, Control plug with 21pin)

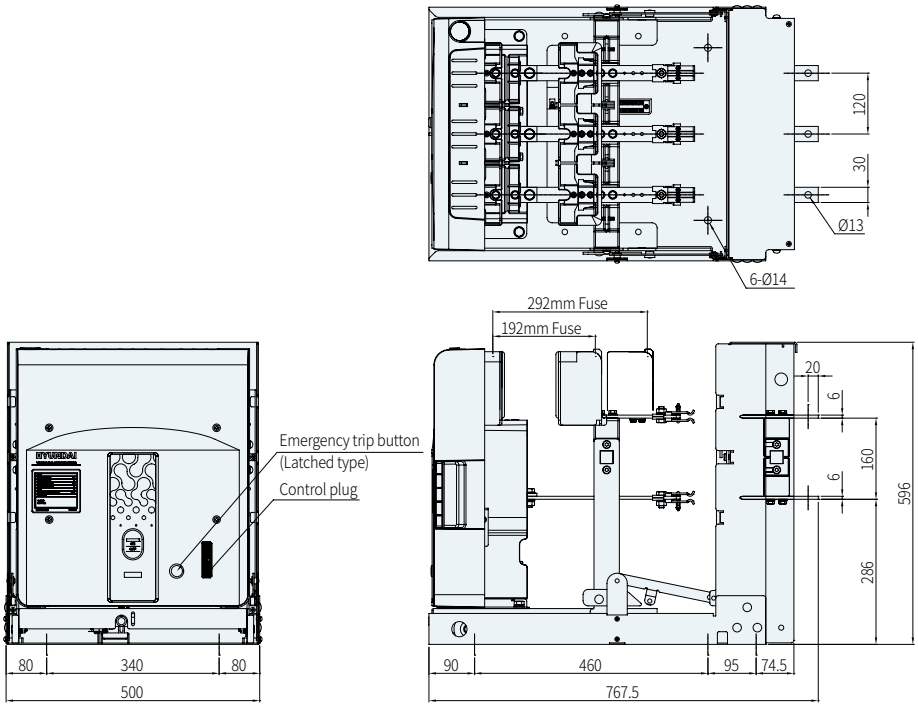


3.6/7.2kV Withdrawable type, E/F cradle (B2, without Fuse, control plug with 52pin)

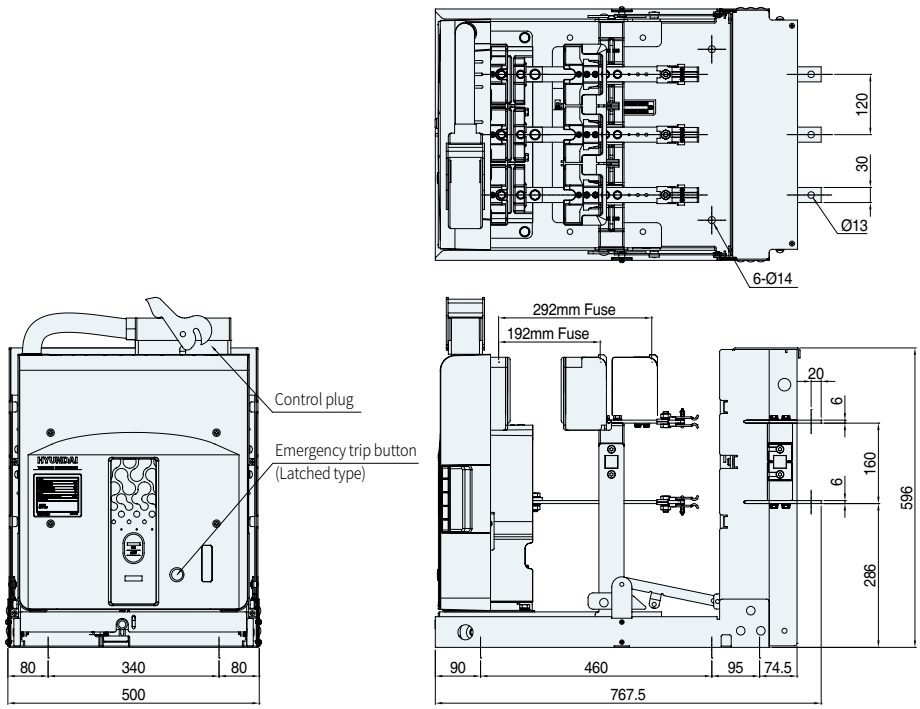


(Unit : mm)

3.6/7.2kV Withdrawable type, E/F cradle (D1, with DIN fuse holder, control plug with 21 pin)



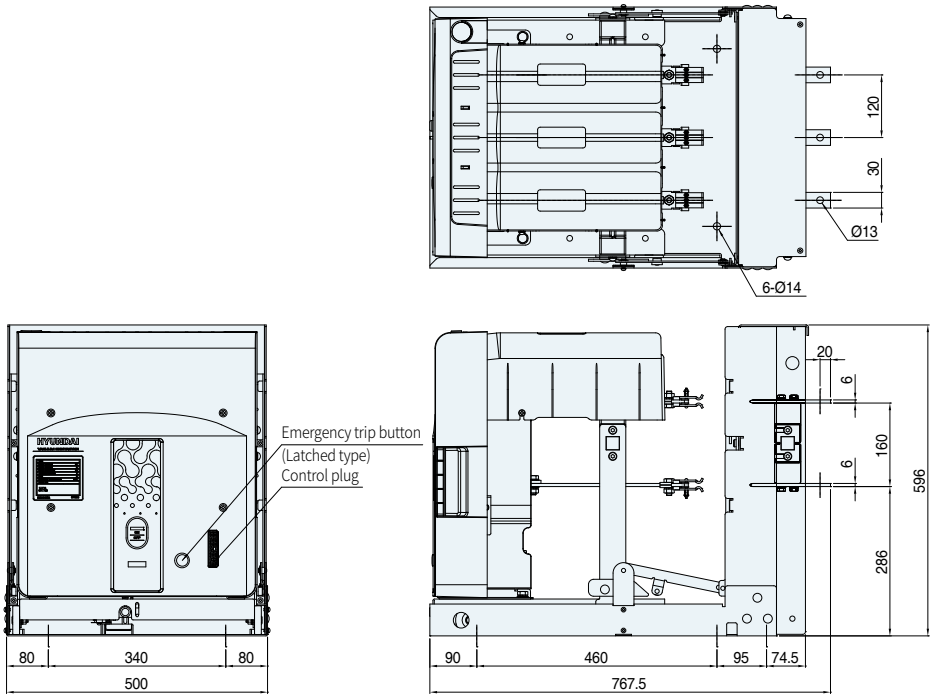
3.6/7.2kV Withdrawable type, E/F cradle (D2, with DIN fuse holder, control plug with 52pin)



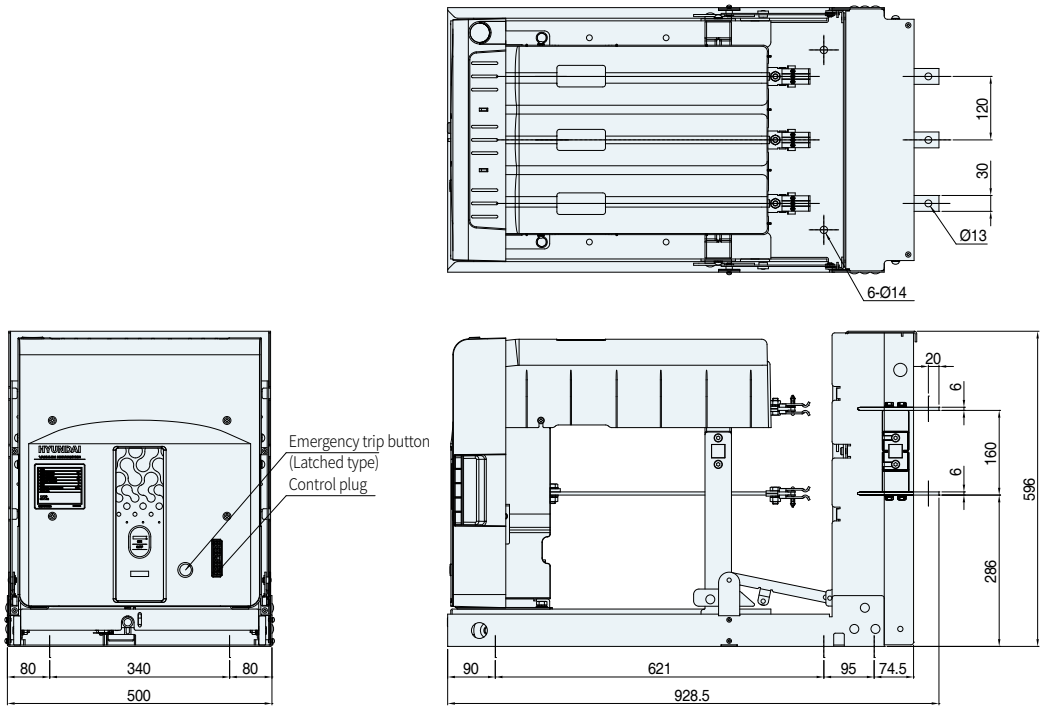
OVERALL DIMENSIONS

(Unit : mm)

3.6/7.2kV Withdrawable type, E/F cradle (D3, with KS fuse holder, control plug with 21pin)

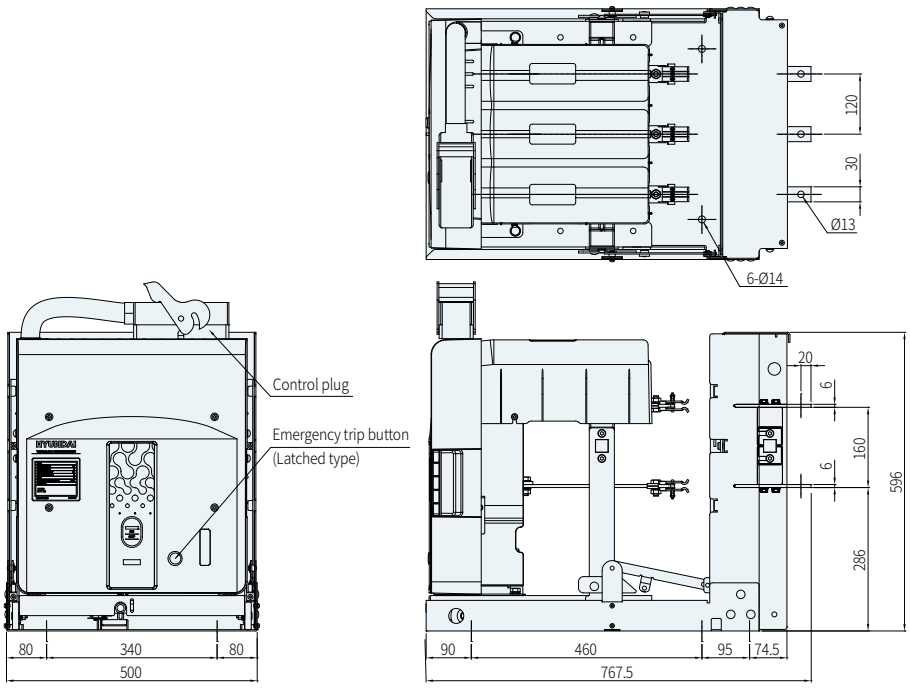


7.2kV Withdrawable type, E/F cradle (D4, with KS fuse holder for 300,400A motor, control plug with 21pin)

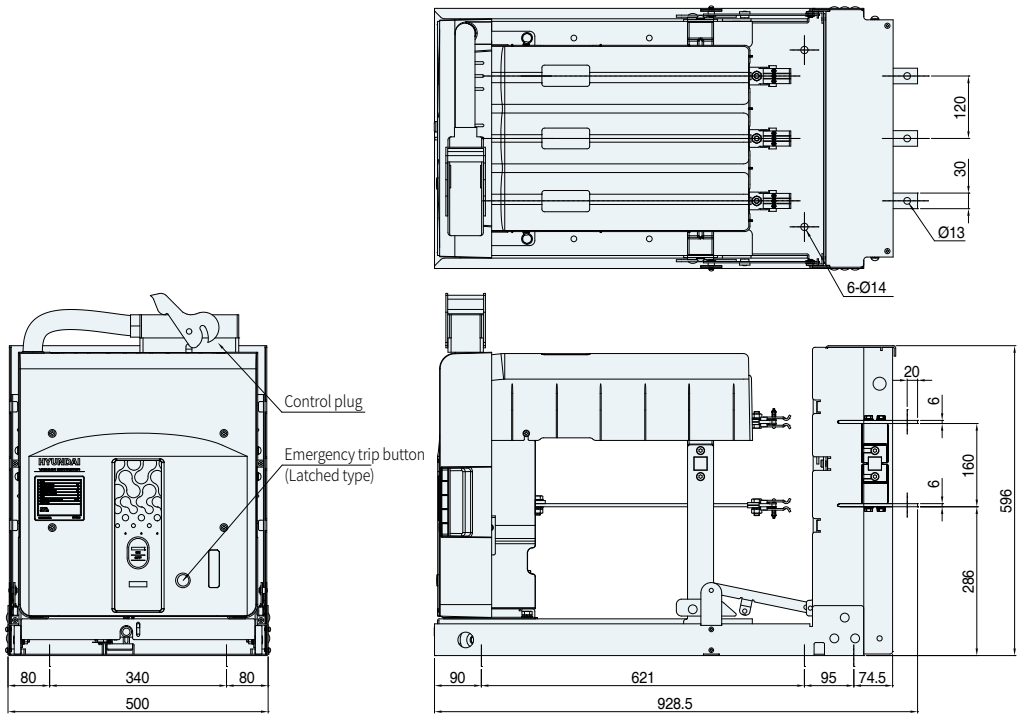


(Unit : mm)

3.6/7.2kV Withdrawable type, E/F cradle (D5, with KS fuse holder, control plug with 52pin)



7.2kV Withdrawable type, E/F cradle (D6, with KS fuse holder for 300,400A motor, control plug with 52pin)



CONTACTOR SELECTION AND ORDERING

UVC □□□□ – □□□□□□□ – □□□□□

1 2 3 4 5 6 7 8

Digit	Item	Specification			Code
1	Rated Voltage	3.6kV			3
		7.2kV			6
2	Rated current	200 A			2
		400 A			4
3	Operating method	Continuously energized			C
		Latched			L
4	Structure	Fixed	Without fuse holder, control plug with 21 pin		X1
			With DIN type fuse holder, control plug with 21 pin		A1
			With KS type fuse holder, control plug with 21 pin		A2
			With KS type fuse holder, for 7.2kV 300/400A Motor, control plug with 21 pin		A3
		Withdrawable	Without fuse holder, control plug with 21 pin		B1
			Without fuse holder, cable type control plug with 52pin		B2
			With DIN type fuse holder, control plug with 21 pin		D1
			With DIN type fuse holder, cable type control plug with 52 pin		D2
			With KS type fuse holder, control plug with 21 pin		D3
			With KS type fuse holder, for 7.2kV 300/400A motor, control plug with 21 pin		D4
			With KS type fuse holder, cable type control plug with 52 pin		D5
			With KS type fuse holder, for 7.2kV 300/400A motor, cable type control plug with 52 pin		D6
5	Cradle	N/A (for fixed type, single terminal)			00
		N/A (for fixed type, dual terminal)			01
		Body part of E type cradle			E0
		E type cradle (without shutter)			E1
		Body part of F type cradle			F0
		F type cradle (with insulation shutter)			F1
6	Fuse application	No fuse holder			0000
		Only Fuse holder	LS KS/G type fuse	Under 3.6kV 50A	200A
				3.6kV 75 ~ 200A	200B
				3.6kV 300/400A	200C
			LS KS/M type fuse	Under 3.6kV 100A	300B
				3.6kV 150 ~ 200A	300C
				3.6kV 300/400A	300D
			LS KS/G type fuse	Under 7.2kV 60A	400A
				7.2kV 75 ~ 100A	400B
				7.2kV 150 ~ 200A	400C
			LS KS/M type fuse	Under 7.2kV 50A	500B
				7.2kV 100 ~ 200A	500C
				7.2kV 300/400A	500D
			DIN type	192mm length, SIBA or LS	6000
				292mm length, SIBA 315/355A	600A

Digit	Item	Specification			Code
	Fuse application	With Fuse	6 □ □ □	SIBA Fuse(7.2kV)	□□□□ (4 digits excluding "UVCS" from Fuse ordering code)
			7 □ □ □	SIBA Fuse(12kV)	
			2 □ □ □	LS KS/G type fuse	
			3 □ □ □	LS KS/M type fuse	
			4 □ □ □	LS KS/G type fuse	
			5 □ □ □	LS KS/M type fuse	
			8 □ □ □	LS DIN type fuse	
			9 □ □ □	LS DIN type fuse	
7	Control voltage	AC/DC 100-125V			L
		AC/DC 200-230V			H
8	Additional Option	Electrical interlock			CL
		Fuse melting detector (DIN standard)			CM
		Fuse meting detector (KS standard)			CD
		Position switch			CP
		PT (Potential transformer)	1 SET	3.3kV / 110V	T1
				3.3kV / 220V	T2
				6.6kV / 110V	T3
				6.6kV / 220V	T5
			2 SET	3.3kV / 110V	T4
				3.3kV / 220V	T7
				6.6kV / 110V	T6
				6.6kV / 220V	T8

Standard order code

Continuously energized				Latched			
Code	Specification			Code	Specification		
UVC32CX1000000L	3.6kV	200A	Fixed type No cradle Without fuse holder AC/DC 100~125V	UVC32LX1000000L	3.6kV	200A	Fixed type No cradle Without fuse holder AC/DC 100~125V
UVC62CX1000000L	7.2kV			UVC62LX1000000L	7.2kV		
UVC32CD3E1200BL	3.6kV	200A	Withdrawable type E1 Cradle With LS KS/G type fuse holder AC/DC 100~125V	UVC32LD3E1200BL	3.6kV	200A	Withrdawable type E1 Cradle With LS KS/G type Fuse holder AC/DC 100~125V
UVC62CD3E1400BL	7.2kV			UVC62LD3E1400BL	7.2kV		
UVC32CD3F1200BL	3.6kV	200A	Withdrawable type F1 Cradle With LS KS/G type fuse holder AC/DC 100~125V	UVC32LD3F1200BL	3.6kV	200A	Withdrawable type F1 Cradle With LS KS/G type fuse holder AC/DC 100~125V
UVC62CD3F1400BL	7.2kV			UVC62LD3F1400BL	7.2kV		
UVC34CB1E10000H	3.6kV	400A	Withdrawable type E1 Cradle Without fuse holder AC/DC 200~230V	UVC34LB1E10000H	3.6kV	400A	Withdrawable type E1 Cradle Without fuse holder AC/DC 200~230V
UVC64CB1E10000H	7.2kV			UVC64LB1E10000H	7.2kV		
UVC34CD3E1300BH	3.6kV	400A	Withdrawable type E1 Cradle With LS KS/M type fuse holder and fuse under 50A AC/DC 200~230V	UVC34LD3E1300BH	3.6kV	400A	Withdrawable type E1 Cradle With LS KS/M type fuse holder and use under 50A AC/DC 200~230V
UVC64CD3E1500BH	7.2kV			UVC64LD3E1500BH	7.2kV		
UVC34CD1F16100H	3.6kV	400A	Withdrawable type F1 Cradle with SIBA 100A Fuse AC/DC 200~230V	UVC34LD1F16100H	3.6kV	400A	Withdrawable type F1 Cradle with SIBA 100A Fuse AC/DC 200~230V
UVC64CD1F16100H	7.2kV			UVC64LD1F16100H	7.2kV		

CONTACTOR SELECTION AND ORDERING

Spare Parts – V8(Order classification)

Code	Specification	Code	Specification
UVCS0001	Counter (5 digits)	UVCS6200	Fuse-7.2kV/200A/50kA, 192mm(SIBA)
UVCS0002	Manual inspection handle	UVCS6250	Fuse-7.2kV/250A/50kA, 192mm(SIBA)
UVCS0003	Latch Device(DC110V)	UVCS6315	Fuse-7.2kV/315A/50kA, 292mm(SIBA)
UVCS0004	Latch Device(DC220V)	UVCS6355	Fuse-7.2kV/355A/50kA, 292mm(SIBA)
UVCS0005	Fuse melting detector	UVCS7006	Fuse-12kV/6.3A/63kA, 292mm(SIBA)
UVCS0006	Position switch	UVCS7010	Fuse-12kV/10A/63kA, 292mm(SIBA)
UVCS0007	Closing coil(for continuously energized)[1]	UVCS7016	Fuse-12kV/16A/63kA, 292mm(SIBA)
UVCS0008	Closing coil(for Latched)[1]	UVCS7020	Fuse-12kV/20A/63kA, 292mm(SIBA)
UVCS0009	Potential Transformer(3.3kV/110V, 200VA)	UVCS7025	Fuse-12kV/25A/63kA, 292mm(SIBA)
UVCS0010	Potential Transformer(3.3kV/220V, 200VA)	UVCS7032	Fuse-12kV/32A/63kA, 292mm(SIBA)
UVCS0011	Potential Transformer(6.6kV/110V, 200VA)	UVCS7040	Fuse-12kV/40A/63kA, 292mm(SIBA)
UVCS0012	Potential Transformer(6.6kV/220V, 200VA)	UVCS7050	Fuse-12kV/50A/63kA, 292mm(SIBA)
UVCS0013	Condenser trip device(AC 110V)	UVCS7063	Fuse-12kV/63A/63kA, 292mm(SIBA)
UVCS0014	Condenser trip device(AC 220V)	UVCS7080	Fuse-12kV/80A/63kA, 292mm(SIBA)
UVCS0015	Shutter Set(E →F class)	UVCS7100	Fuse-12kV/100A/63kA, 292mm(SIBA)
UVCS0016	Control cable (1.5m)	UVCS7125	Fuse-12kV/125A/63kA, 292mm(SIBA)
UVCS0017	Fuse Holder(for DIN type fuse)[2]	UVCS7160	Fuse-12kV/160A/63kA, 292mm(SIBA)
UVCS0018	Isolating Contact[2]	UVCS7200	Fuse-12kV/200A/50kA, 292mm(SIBA)
UVCS0019	Controller(AC/DC100~125V, AC/DC200~230V)	UVCS2005	Fuse-3.6kV/5A/40kA/KS G-type(LS)
UVCS0021	E cradle(200/400A)	UVCS2010	Fuse-3.6kV/10A/40kA/KS G-type(LS)
UVCS0022	F cradle(200/400A)	UVCS2020	Fuse-3.6kV/20A/40kA/KS G-type(LS)
UVCS0023	Trip coil(DC110V)	UVCS2030	Fuse-3.6kV/30A/40kA/KS G-type(LS)
UVCS0024	Trip coil(DC220V)	UVCS2040	Fuse-3.6kV/40A/40kA/KS G-type(LS)
HVC00703	Vacuum interrupter(7.2kV 400A)[3]	UVCS2050	Fuse-3.6kV/50A/40kA/KS G-type(LS)
UVCS6006	Fuse-7.2kV/6.3A/63kA, 192mm(SIBA)	UVCS2060	Fuse-3.6kV/60A/40kA/KS G-type(LS)
UVCS6010	Fuse-7.2kV/10A/63kA, 192mm(SIBA)	UVCS2075	Fuse-3.6kV/75A/40kA/KS G-type(LS)
UVCS6020	Fuse-7.2kV/20A/63kA, 192mm(SIBA)	UVCS2100	Fuse-3.6kV/100A/40kA/KS G-type(LS)
UVCS6025	Fuse-7.2kV/25A/63kA, 192mm(SIBA)	UVCS2150	Fuse-3.6kV/150A/40kA/KS G-type(LS)
UVCS6032	Fuse-7.2kV/31.5A/63kA, 192mm(SIBA)	UVCS2200	Fuse-3.6kV/200A/40kA/KS G-type(LS)
UVCS6040	Fuse-7.2kV/40A/63kA, 192mm(SIBA)	UVCS2300	Fuse-3.6kV/300A/40kA/KS G-type(LS)
UVCS6050	Fuse-7.2kV/50A/63kA, 192mm(SIBA)	UVCS2400	Fuse-3.6kV/400A/40kA/KS G-type(LS)
UVCS6063	Fuse-7.2kV/63A/63kA, 192mm(SIBA)	UVCS3020	Fuse-3.6kV/20A/40kA/KS M-type(LS)
UVCS6080	Fuse-7.2kV/80A/63kA, 192mm(SIBA)	UVCS3050	Fuse-3.6kV/50A/40kA/KS M-type(LS)
UVCS6100	Fuse-7.2kV/100A/63kA, 192mm(SIBA)	UVCS3100	Fuse-3.6kV/100A/40kA/KS M-type(LS)
UVCS6125	Fuse-7.2kV/125A/63kA, 192mm(SIBA)	UVCS3150	Fuse-3.6kV/150A/40kA/KS M-type(LS)
UVCS6160	Fuse-7.2kV/160A/63kA, 192mm(SIBA)	UVCS3200	Fuse-3.6kV/200A/40kA/KS M-type(LS)

Code	Specification	Code	Specification
UVCS3300	Fuse-3.6kV/300A/40kA/KS M-type(LS)	UVCS8020	Fuse-3.6kV/20A/40kA/DIN type(LS)
UVCS3400	Fuse-3.6kV/400A/40kA/KS M-type(LS)	UVCS8030	Fuse-3.6kV/30A/40kA/DIN type(LS)
UVCS4005	Fuse-7.2kV/5A/40kA/KS G-type(LS)	UVCS8040	Fuse-3.6kV/40A/40kA/DIN type(LS)
UVCS4010	Fuse-7.2kV/10A/40kA/KS G-type(LS)	UVCS8050	Fuse-3.6kV/50A/40kA/DIN type(LS)
UVCS4020	Fuse-7.2kV/20A/40kA/KS G-type(LS)	UVCS8063	Fuse-3.6kV/63A/40kA/DIN type(LS)
UVCS4030	Fuse-7.2kV/30A/40kA/KS G-type(LS)	UVCS8075	Fuse-3.6kV/75A/40kA/DIN type(LS)
UVCS4040	Fuse-7.2kV/40A/40kA/KS G-type(LS)	UVCS8100	Fuse-3.6kV/100A/40kA/DIN type(LS)
UVCS4050	Fuse-7.2kV/50A/40kA/KS G-type(LS)	UVCS8125	Fuse-3.6kV/125A/40kA/DIN type(LS)
UVCS4060	Fuse-7.2kV/60A/40kA/KS G-type(LS)	UVCS8160	Fuse-3.6kV/160A/40kA/DIN type(LS)
UVCS4075	Fuse-7.2kV/75A/40kA/KS G-type(LS)	UVCS8200	Fuse-3.6kV/200A/40kA/DIN type(LS)
UVCS4100	Fuse-7.2kV/100A/40kA/KS G-type(LS)	UVCS9005	Fuse-7.2kV/5A/40kA/DIN type(LS)
UVCS4150	Fuse-7.2kV/150A/40kA/KS G-type(LS)	UVCS9010	Fuse-7.2kV/10A/40kA/DIN type(LS)
UVCS4200	Fuse-7.2kV/200A/40kA/KS G-type(LS)	UVCS9020	Fuse-7.2kV/20A/40kA/DIN type(LS)
UVCS5020	Fuse-7.2kV/20A/40kA/KS M-type(LS)	UVCS9030	Fuse-7.2kV/30A/40kA/DIN type(LS)
UVCS5050	Fuse-7.2kV/50A/40kA/KS M-type(LS)	UVCS9040	Fuse-7.2kV/40A/40kA/DIN type(LS)
UVCS5100	Fuse-7.2kV/100A/40kA/KS M-type(LS)	UVCS9050	Fuse-7.2kV/50A/40kA/DIN type(LS)
UVCS5150	Fuse-7.2kV/150A/40kA/KS M-type(LS)	UVCS9063	Fuse-7.2kV/63A/40kA/DIN type(LS)
UVCS5200	Fuse-7.2kV/200A/40kA/KS M-type(LS)	UVCS9075	Fuse-7.2kV/75A/40kA/DIN type(LS)
UVCS5300	Fuse-7.2kV/300A/40kA/KS M-type(LS)	UVCS9100	Fuse-7.2kV/100A/40kA/DIN type(LS)
UVCS5400	Fuse-7.2kV/400A/40kA/KS M-type(LS)	UVCS9125	Fuse-7.2kV/125A/40kA/DIN type(LS)
UVCS8005	Fuse-3.6kV/5A/40kA/DIN type(LS)	UVCS9160	Fuse-7.2kV/160A/40kA/DIN type(LS)
UVCS8010	Fuse-3.6kV/10A/40kA/DIN type(LS)	UVCS9200	Fuse-7.2kV/200A/40kA/DIN type(LS)

※ 1) 2EA is required to order for 1 set.
2) 6EA is required to order for 1 set.
3) 3EA is required to order for 1 set.
- 3EA is required for 1 set of fuse.

OPERATING CONDITION

- Install the contactor in a dry place with a low vibration.
- Horizontal installation is standard.
- In case of vertical installation, the front cover must be facing upward.

Standard Service Condition

Altitude : Less than 1,000m

- Correction of site altitude

If the site altitude is higher than 1,000m, dielectric strength of the breaker will be reduced according to the altitude.
Therefore, the values of power frequency withstand voltage and lightning impulse withstand voltage should be corrected as follows.

Corrected value = power frequency withstand voltage and lightning impulse withstand voltage according to rated voltage x K

Site Altitude(m)	1000	1500	2000
Correction Factor(K)	1.0	1.05	1.1

Rated ambient temperature : -5°C~+40°C

- Correction of ambient temperature

When the contactor is operated above the rated ambient temperature, it is necessary to increase of load current by the correction factor as below.
Specially, proper ventilation is required once the contactors are loaded on 3 levels.

Ambient temperature(°C)	40	45	50	55	60
Correction Factor(a)	1.0	1.05	1.1	1.15	1.2
Inversion ratio	0.1	0.95	0.9	0.87	0.83
400A base allowed current value(A)	400	381	364	348	333

Humidity : Relative humidity less than 8.5%

In case of operation in places with high humidity, it is recommended to use a heater in the switchgear to prevent the contactor from dewdrops on the insulation material and the consecutive decrease in dielectric strength.

Environment

In case of operating the contactor at a beach or in a toxic place, please contact us before installation.
If the product is being installed on chemical facilities, beaches or outdoors, please pay attention to the measures to avoid contamination and corrosion that could cause insulation failure.

PRECAUTIONS WHEN OPERATING

General

⚠ WARNING

- Be careful for the damage of product as electrical shock or malfunction could be occurred.
- Be sure that bolts are tightened and check the assembly condition periodically.
- Be sure to choose the exact ratings of product. Using the product with incorrect rating would cause fire, electrical shock and malfunction.
- Do not install products in area with high temperature, high humidity, dusty, corrosive or vibrating conditions.
- Protect the contactor from trash, concrete powder, raindrops or any fragments which may cause fire, electrical shock and malfunction.
- Never use any lubricating oil which may cause electrical shock or fire.

Transportation & Storage

⚠ NOTICE

- Keep the product packed in storage.
- Don't leave the products on the floor of warehouse. Keep the product on the shelf Or any similar place.
- Be sure to use the transportation vehicle like forklift to prevent the worker from any damage when transporting the products.

Installation, operation and maintenance

⚠ WARNING

- Only qualified persons with electrical engineering are permitted to operate the contactors.
- To prevent the operator from electric shock, disconnect the line by using upstream breaker and be sure the electric flows are off before wiring operation.
- Be sure to operate the contactor with correct rated voltage.
- Use cables and terminal with the standard and tighten the bolts by the instruction of manual.
- Damaged part should be replaced.
- Be sure to check the condition of wiring and shape of product regularly.
- Check any missing parts before using products.
- Malfunctioning auxiliary switches should be replaced.
- Standard tools must be used.