

Derwent
Top 100
Global
Innovator
2020

Susol *Super Solution*

Vacuum Contactor



LS *ELECTRIC*

Susol *Super Solution*

Vacuum Contactor

**Customer satisfaction through quality and services,
Susol Vacuum Contactor**

Susol Vacuum Contactor applied with a self-produced Vacuum Interrupter (VI), a device widely recognized for its innovative technology, has passed the authorized agency's development testing, proving their high quality.



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3.6 / 7.2kV

Performance verification within a short time with the developed earthing switch



- Rated short time : 1 second
- Standard duty cycle : CO
- Compatible with existing product (Tri-MEC)
- Equipped with a wide range of cradles:
 Fixed type, E, F, G, B, M and H-class
- CB compartment for MCSG (Phase-to-phase 150mm VCS)
 - Box-type cradle available

Diverse control power

- DC 110, 125, 220V - AC 110, 125, 220V

Various auxiliary devices

- VCS Part: Locking magnet, key lock, button cover, button padlock, padlock (H-type door interlock) and fuse checker
- Cradle part: Position switch, earthing switch & accessories, door and door interlock
- Others: Racking in / out Handle, CTD (Condenser trip device) and PT (Potential transformer)

Automatic racking-in / Out display

Applied standards & certification

- IEC62271-106
- V-check (Kesco) certification
- Certification for classification: LR (Lloyd's register) and NK (Nippon kaiji kyokai)

Authorized agency's development testing & certification

- Authorized development testing agency based on IEC62271-106
- Verification for PF-40kA short circuit protection coordination
 - Breaking test: 40kA short-circuit breaking successful
 - Making test: 40kA short-circuit making successful
- KAS-certified V-check mark



Susol Vacuum Contactor

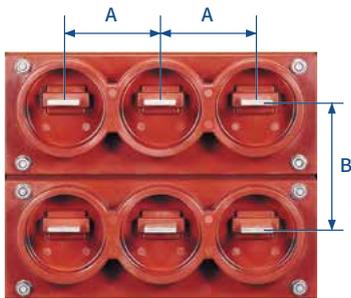
Characteristics

Compatible with domestic / Overseas VCS manufacturers' models



Note) Please refer to the contact information for retrofit products.

Integral bushing



Vacuum Interrupters



Compatibility

It is a customer-oriented product considering its easy maintenance and economic feasibility. In particular, it is easy to replace the product because the new / Old model's body, distance between the racking-in / Out rails of cradles, clearance and in-phase spacing are the same.

High-performance, high-reliability and long life

The vacuum interrupter (VI) complies with international standards, including IEC, ANSI and NEMA; and it is highly reliable as it collectively performs brazing at the vacuum furnace.

Outstanding mechanical strength and degassing

It uses a high alumina ceramic tube for better mechanical strength. With superb degassing at high temperature, it demonstrates excellent durability and frequency in switching.

High-speed breaking and arc discharge in a short time

Because of the fast vacuum insulation recovery characteristic, the current is cut off at the initial current zero point after contact opening, so contact damage and losses are minimal.

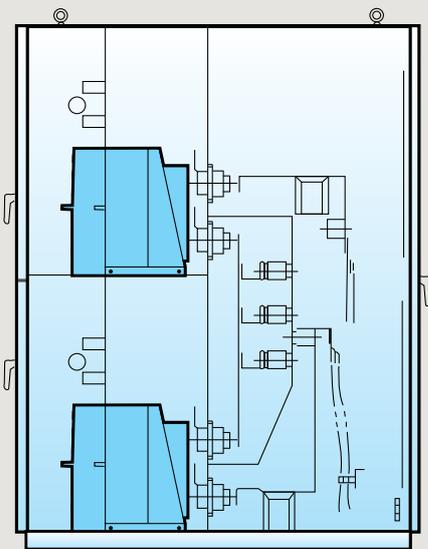
Various safety devices for users



- Racking-in / Out interlock device
- Truck for external racking-in / out
- One-mold fuse holder
- A wide range of dual protective devices
- Power fuse operation indicator (Fuse checker) and micro-switch



Metal clad switchgear



Metal clad switchgear applied

An integral cradle bushing (Class B) and fuse holder are structured in one mold, which can be applied to the metal clad switchgear.

Interlock device

An interlock device is basically built-in for the user's safety when racking in / Out.

Mechanical interlock type

2 VC units are connected with the mechanical interlock device for stable and convenient motor (Reverse) driving and commercial / Back-up power transfer.

Truck for external racking-out and lever device

It is a device that may rack in / Out the VC units without opening the door outside the panel, minimizing the risk of electric shock.

Body & cradle

Fixed type (3.6/7.2/12kV)

- Fixed type is divided into a standard type and fuse-combined type.



3.6/7.2kV



3.6/7.2kV (Fuse-combined)



12kV

Lever type (3.6/7.2kV)

- Lever type is divided into a standard type and fuse-combined type.
- E/F/G-class cradles are applicable.



3.6/7.2kV



3.6/7.2kV (Fuse-combined)

Cradle

- **E-class cradle:** An economical cradle in a basic structure.
- **F-class cradle:** An E-class cradle attached with an insulating shutter.
- **G-class cradle:** A premium E-class cradle with an insulating shutter and bushing.



E-class cradle



F-class cradle



G-class cradle

Screw type (3.6/7.2kV)

- Screw type is divided into a standard type and fuse-combined type.
- B / H-class cradles are applicable.



Cradle

- **B-class cradle:** A premium E-class cradle with an insulating shutter and bushing.
- **H-class cradle:** A premium cradle with an insulating shutter, bushing and earthing switch.



Screw type (12kV)

- 12kV VCS screw type is divided into a standard type and fuse-combined type.
- M / H (12kV)-class cradles are applicable.



Cradle

- **M-class cradle:** A premium cradle with a metal shutter and bushing.
- **H-class cradle:** A premium cradle with a metal shutter and bushing, bushing and earthing switch.



Susol Vacuum Contactor Rating



| Type | | Fixed type (Z) | | | | Non-fuse lever type (D) | | | | Non-fuse screw type (K) | | | |
|------------------------------------|--------------------------------|---|----------------|----------------|----------------|-------------------------|----------------|----------------|----------------|-------------------------|----------------|----------------|----------------|
| Model | Continuous excitation type (E) | VC-3Z -42OE | VC-6Z -42OE | VC-3Z -44OE | VC-6Z -44OE | VC-3D -42OE | VC-6D -42OE | VC-3D -44OE | VC-6D -44OE | VC-3K -42OE | VC-6K -42OE | VC-3K -44OE | VC-6K -44OE |
| | Latch type (L) | | | | | | | | | | | | |
| Rated voltage | Ur (kV) | 3.6 | 7.2 | 3.6 | 7.2 | 3.6 | 7.2 | 3.6 | 7.2 | 3.6 | 7.2 | 3.6 | 7.2 |
| Rated current | Ie (A) | 200 | | 400 | | 200 | | 400 | | 200 | | 400 | |
| Rated frequency | fr (Hz) | 50/60 | | | | | | | | | | | |
| Rated breaking current | (kA, O-3min-CO-2min-CO) | 4 | | | | | | | | | | | |
| Rated short time withstand current | (kA-sec) | 2.4kA-30s, 4kA-10s, 6kA-2s, 6.3kA-1s | | | | | | | | | | | |
| Rates short time peak current | (kApeak-0.5Cycle) | 60 | | | | | | | | | | | |
| Operating frequency (AC3) | (op./hour) | E: Continuous excitation 1200, L: Latch 300 | | | | | | | | | | | |
| Life | Mechanical (10,000 times) | E: Continuous excitation 100, L: Latch 30 | | | | | | | | | | | |
| | Electrical (10,000 times) | 30 | | | | | | | | | | | |
| Lightning impulse | Up (kV) | 60 | | | | | | | | | | | |
| Power frequency withstand voltage | Ud (kV/1min) | 20 | | | | | | | | | | | |
| Operating power excitation | | E: Continuous excitation, L: Latch | | | | | | | | | | | |
| Operating voltage | | DC/AC 110V, 125V, 220V | | | | | | | | | | | |
| Auxiliary contact | Current-carrying capacity (A) | 10(AC) | | | | | | | | | | | |
| | Applied voltage (V) | 600max ~ 48min | | | | | | | | | | | |
| | Number of contacts | Continuous excitation 3a3b, latch 2a2b | | | | 2a2b | | | | | | | |
| Maximum capacity (Three-phase) | Motor (kW) | 750 | 1,500 | 1,500 | 3,000 | 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 | 1,000 | 2,000 | 2,000 | 4,000 |
| | Condenser (kVA) | 750 | 1,500 | 1,200 | 2,000 | 750 | 1,500 | 1,200 | 2,000 | 750 | 1,500 | 1,200 | 2,000 |
| Certification | Lloyd's register of shipping | ○ | | | | ○ | | | | ○ | | | |
| | Nippon kaiji kyokai | ○ | | | | ○ | | | | ○ | | | |
| Weight | (kg) | 24 | | | | 41 | | | | 56 | | | |



| Type | | Combination lever type (G) | | | | Combination screw type (B) | | | | Combination fixed type (F) | | | |
|------------------------------------|--------------------------------------|---|----------------|----------------------|----------------|----------------------------|----------------|----------------|----------------|----------------------------|----------------|----------------|----------------|
| Model | Continuous excitation type (E) | VC-3G -42OE | VC-6G -42OE | VC-3G -44OE | VC-6G -44OE | VC-3B -42OE | VC-6B -42OE | VC-6B -44OE | VC-3F -42OE | VC-6F -42OE | VC-3F -44OE | VC-3F -44OE | VC-6F -44OE |
| | Latch type (L) | | | | | | | | | | | | |
| Rated voltage | Ur (kV) | 3.6 | 7.2 | 3.6 | 7.2 | 3.6 | 7.2 | 3.6 | 7.2 | 3.6 | 7.2 | 3.6 | 7.2 |
| Rated current | Ie (A) | 200 | | 400 | | 200 | | 400 | | 200 | | 400 | |
| Rated frequency | fr (Hz) | 50/60 | | | | | | | | | | | |
| PF Combination | Short-circuit making | Making | | 4kA (40kA with fuse) | | | | | | | | | |
| | Short-circuit breaking | Breaking | | 40kA | | | | | | | | | |
| | Transfer-current (O-3min-O-breaking) | (O-3min-O-breaking) | | 40kA | | | | | | | | | |
| Rated breaking current | (kA, O-3min-CO-2min-CO) | 40kA | | | | | | | | | | | |
| Rated short time withstand current | (kA-sec) | 2.4kA-30s, 4kA-10s, 6kA-2s, 6.3kA-1s | | | | | | | | | | | |
| Rates short time peak current | (kApeak-0.5Cycle) | 60 | | | | | | | | | | | |
| Operating frequency (AC3) | (op. / hour) | E: Continuous excitation 1200, L: Latch 300 | | | | | | | | | | | |
| Life | Mechanical (10,000 times) | E: Continuous excitation 100, L: Latch 30 | | | | | | | | | | | |
| | Electrical (10,000 times) | 30 | | | | | | | | | | | |
| Lightning impulse | Up (kV) | 60 | | | | | | | | | | | |
| Power frequency withstand voltage | Ud (kV / 1min) | 20 | | | | | | | | | | | |
| Operating power excitation | | E: Continuous excitation, L: Latch | | | | | | | | | | | |
| Operating voltage | | DC/AC 110V, 125V, 220V | | | | | | | | | | | |
| Auxiliary contact | Current-carrying capacity (A) | 10(AC) | | | | | | | | | | | |
| | Applied voltage (V) | 600max ~ 48min | | | | | | | | | | | |
| | Number of contacts | 2a2b | | | | | | | | | | | |
| Certification | Lloyd's register of shipping | ○ | | | | ○ | | | | ○ | | | |
| | Nippon kaiji kyokai | ○ | | | | ○ | | | | ○ | | | |
| Weight | (kg) | 46 | | | | 62 | | | | 46 | | | |

Note)

Weight of the combination lever type excludes the PT weight.

*Applied load capacity varies according to the PT rating.



| Type | | Fixed type (Z) | Non-fuse screw type (K) | Combination screw type (B) |
|------------------------------------|--|---|-------------------------|----------------------------|
| Model | Continuous excitation type (E) Latch type (L) | VC-12Z-44○E | VC-12K-44○E | VC-12B-44○E |
| Rated voltage | Ur(kV) | 12 | | |
| Rated current | Ie(A) | 400 | | |
| Rated frequency | fr(Hz) | 50 / 60 | | |
| Rated breaking current | (kA, 0-3min-CO-2min-CO) | 4 | | |
| Rated short time withstand current | (kA-sec) | 2.4kA-30s, 4kA-10s, 6kA-2s, 6.3kA-4s | | |
| Rates short time peak current | (kApeak-0.5Cycle) | 60 | | |
| Operating frequency (AC4) | (op. / hour) | E: Continuous excitation 1200, L: Latch 300 | | |
| Life | Mechanical (10,000 times) | E: Continuous excitation 100, L: Latch 30 | | |
| | Electrical (10,000 times) | 30 | | |
| Lightning impulse | Up (kV) | 75 | | |
| Power frequency withstand voltage | Ud (kV/1min) | 42 | | |
| Operating power excitation | | E : Continuous excitation, L : Latch | | |
| Operating voltage | | Continuous excitation : DC / AC 110V, 125V, 220V Latch : DC 110V, 125V, 220V | | |
| Auxiliary contact | Current-carrying capacity (A) | 10(AC) | | |
| | Applied voltage (V) | 600max ~ 48min | | |
| | Number of contacts | Continuous excitation 3a3b, Latch 2a2b | 2a2b | |
| Maximum capacity (Three-phase) | Motor (kW) | 6,000 | | |
| | Transformer (kVA) | 8,000 | | |
| | Condenser (kVA) | 4,000 | | |
| Weight (kg) | | 30 | 60 | 60 |



Power fuse rating

| Type | Model | Rated voltage (kV) | Rated current (A) | External diameter (mm) | Length (mm) | |
|--------------|----------------------|--------------------|---|------------------------|-------------|-----|
| DIN type | LFL-3 / 6G-OB | 3.6 / 7.2 | 5, 10, 20, 30, 40, 50, 63, 75, 100 | 45 | 192 | |
| | LFL-3 / 6G-OB | 3.6 / 7.2 | 125 | | 292 | |
| | LFL-3G-OB | 3.6 | 160, 200 | | 292 | |
| | LFL-6G-OB | 7.2 | 160, 200 | | 292 | |
| KS type | For general loading | LFL-3 / 6G-○ | 5(T1.5), 10(T3), 20(T7.5), 30(T15), 40(T20), 50(T30), 60(T30) | 50 | 261 | |
| | | | 75(T50), 100(T75) | 60 | 311 | |
| | | LFL-3G-○ | 150(T100), 200(T150) | 60 | 311 | |
| | | | 300(T250), 400(T300) | 77 | 311 | |
| | For motor protection | LFL-6G-○ | 150(T100), 200(T150) | 77 | 311 | |
| | | | LFL-3M-○ | M20, M50, M100 | 60 | 200 |
| | | | | M150, M200 | 77 | 200 |
| | | M300, (M400) | | 87 | 250 | |
| | | LFL-6M-○ | M20, M50 | 60 | 311 | |
| | | | M100, M150, M200 | 77 | 350 | |
| M300, (M400) | 87 | | 450 | | | |

* LFL-6G-300, 400 cannot be combined with VCS.

* Our 12kV VCS has been tested for circuit protection (SCPD: Short circuit protective devices) and completed verification for fuse combination. (Test fuse : SIBA, 12kV, 200A)

Susol Vacuum Contactor

Model classification

3.6 / 7.2kV body

| | | | | | | | |
|--------------------------|---------------------------|--|------------------------------|--------------------------|------------------------------------|------------------------|--|
| VC | 03 | G | 4 | 2 | E | E | D1 |
| Unique identifier | Rated voltage (kV) | Connection type | Breaking current (kA) | Rated current (A) | Operating method | Measurement No. | Operating voltage |
| VC Vacuum contactor | 03 3.6 06 7.2 | Z Fixed type D Non-fuse lever type G PF-combined lever type F PF-combined fixed type K Non-fuse screw type B PF-combined screw type | 4 4 | 2 200 4 400 | E Continuous excitation L Latch | E Slsol | D1 DC 110V D2 DC 220V D3 DC 125V A1 AC 110V A2 AC 220V A3 AC 125V |

Note)
 1. C0, P0, T0, F00 is the default setting for Z and D types.
 2. C0, P0, F00 is the default setting for K type.
 3. P0, T0 is the default setting for F type.

| C1 | P2 | T1 | F01 | BI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|--|--|---|-------------|-------------------|------------------|-------------------------------|-----|---------------------------------|--|--|--|-----|-----------------|-----|-------|---|-----|---------------|-----|-------|------------------|-----|--------------------------------|-----|-------|---------------------------------------|-----|----------------|-----|-------|------------------|-----|----------------------------------|-----|-------|---|-----|----------------|-----|-------|------------------|-----|----------------|-----|-------|--------------------------------|-----|----------------|-----|-------|--------------------------------|-----|-------------------|-----|-------|---|-----|----------------------|-----|-------|---|--|------|-------------|---|---------|---|----------------|---|--------------|---|---------------|---|------------------|---|--|---|--|---|----------------|---|-----------------------------------|---|-----------------|---|-----|
| Fuse checker | PT | Truck | Fuse | Accessory | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C0 None C1 Standard type C2 SBA type | P0 None P1 100Var, 1EA P2 100Var, 2EA P3 200Var, 1EA P4 200Var, 2EA | T0 Standard type T1 Earthing switch T2 Metal shutter | <table border="1"> <thead> <tr> <th>Code</th> <th>Description</th> <th>External diameter</th> <th>Assembled length</th> <th>VC rating (Voltage / Current)</th> </tr> </thead> <tbody> <tr> <td>F00</td> <td>When Z, D or K type is selected</td> <td></td> <td></td> <td></td> </tr> <tr> <td>F01</td> <td>LFL-3 / 6G-5-60</td> <td>Φ50</td> <td>261mm</td> <td>3.3 / 6.6kV 200 / 400A ; for common use</td> </tr> <tr> <td>F02</td> <td>LFL-3M-20~100</td> <td>Φ60</td> <td>200mm</td> <td>3.3kV 200 / 400A</td> </tr> <tr> <td>F03</td> <td>LFL-3G-150~200 LFL-6M-20~50</td> <td>Φ60</td> <td>310mm</td> <td>3.3/6.6kV 200 / 400A ; for common use</td> </tr> <tr> <td>F04</td> <td>LFL-3M-150~200</td> <td>Φ77</td> <td>202mm</td> <td>3.3kV 200 / 400A</td> </tr> <tr> <td>F05</td> <td>LFL-3G-300~400 LFL-6G-150~200</td> <td>Φ77</td> <td>307mm</td> <td>3.3 / 6.6kV 200 / 400A ; for common use</td> </tr> <tr> <td>F06</td> <td>LFL-6M-100~200</td> <td>Φ77</td> <td>344mm</td> <td>6.6kV 200 / 400A</td> </tr> <tr> <td>F07</td> <td>LFL-3M-300~400</td> <td>Φ87</td> <td>252mm</td> <td>3.3kV 400A ; for exclusive use</td> </tr> <tr> <td>F08</td> <td>LFL-6M-300~400</td> <td>Φ87</td> <td>450mm</td> <td>6.6kV 400A ; for exclusive use</td> </tr> <tr> <td>F09</td> <td>LFL-3 / 6G-5~100B</td> <td>Φ45</td> <td>258mm</td> <td>3.3 / 6.6kV 200 / 400A ; for common use</td> </tr> <tr> <td>F10</td> <td>LFL-3 / 6G-125B-200B</td> <td>Φ45</td> <td>358mm</td> <td>3.3 / 6.6kV 200 / 400A ; for common use</td> </tr> </tbody> </table> | Code | Description | External diameter | Assembled length | VC rating (Voltage / Current) | F00 | When Z, D or K type is selected | | | | F01 | LFL-3 / 6G-5-60 | Φ50 | 261mm | 3.3 / 6.6kV 200 / 400A ; for common use | F02 | LFL-3M-20~100 | Φ60 | 200mm | 3.3kV 200 / 400A | F03 | LFL-3G-150~200 LFL-6M-20~50 | Φ60 | 310mm | 3.3/6.6kV 200 / 400A ; for common use | F04 | LFL-3M-150~200 | Φ77 | 202mm | 3.3kV 200 / 400A | F05 | LFL-3G-300~400 LFL-6G-150~200 | Φ77 | 307mm | 3.3 / 6.6kV 200 / 400A ; for common use | F06 | LFL-6M-100~200 | Φ77 | 344mm | 6.6kV 200 / 400A | F07 | LFL-3M-300~400 | Φ87 | 252mm | 3.3kV 400A ; for exclusive use | F08 | LFL-6M-300~400 | Φ87 | 450mm | 6.6kV 400A ; for exclusive use | F09 | LFL-3 / 6G-5~100B | Φ45 | 258mm | 3.3 / 6.6kV 200 / 400A ; for common use | F10 | LFL-3 / 6G-125B-200B | Φ45 | 358mm | 3.3 / 6.6kV 200 / 400A ; for common use | <table border="1"> <thead> <tr> <th>Code</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Padlock</td> </tr> <tr> <td>B</td> <td>Button padlock</td> </tr> <tr> <td>C</td> <td>Button cover</td> </tr> <tr> <td>D</td> <td>Lead wire(3M)</td> </tr> <tr> <td>E</td> <td>Plug, pin(21pin)</td> </tr> <tr> <td>G</td> <td>Blue, flame-retardant wire (Lead wire)</td> </tr> <tr> <td>H</td> <td>Yellow, flame-retardant wire (Lead wire)</td> </tr> <tr> <td>I</td> <td>Position S / W</td> </tr> <tr> <td>J</td> <td>Additional 3a3b auxiliary contact</td> </tr> <tr> <td>K</td> <td>3Position S / W</td> </tr> <tr> <td>L</td> <td>CTD</td> </tr> </tbody> </table> | Code | Description | A | Padlock | B | Button padlock | C | Button cover | D | Lead wire(3M) | E | Plug, pin(21pin) | G | Blue, flame-retardant wire (Lead wire) | H | Yellow, flame-retardant wire (Lead wire) | I | Position S / W | J | Additional 3a3b auxiliary contact | K | 3Position S / W | L | CTD |
| Code | Description | External diameter | Assembled length | VC rating (Voltage / Current) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F00 | When Z, D or K type is selected | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F01 | LFL-3 / 6G-5-60 | Φ50 | 261mm | 3.3 / 6.6kV 200 / 400A ; for common use | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F02 | LFL-3M-20~100 | Φ60 | 200mm | 3.3kV 200 / 400A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F03 | LFL-3G-150~200 LFL-6M-20~50 | Φ60 | 310mm | 3.3/6.6kV 200 / 400A ; for common use | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F04 | LFL-3M-150~200 | Φ77 | 202mm | 3.3kV 200 / 400A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F05 | LFL-3G-300~400 LFL-6G-150~200 | Φ77 | 307mm | 3.3 / 6.6kV 200 / 400A ; for common use | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F06 | LFL-6M-100~200 | Φ77 | 344mm | 6.6kV 200 / 400A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F07 | LFL-3M-300~400 | Φ87 | 252mm | 3.3kV 400A ; for exclusive use | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F08 | LFL-6M-300~400 | Φ87 | 450mm | 6.6kV 400A ; for exclusive use | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F09 | LFL-3 / 6G-5~100B | Φ45 | 258mm | 3.3 / 6.6kV 200 / 400A ; for common use | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F10 | LFL-3 / 6G-125B-200B | Φ45 | 358mm | 3.3 / 6.6kV 200 / 400A ; for common use | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Code | Description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | Padlock | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B | Button padlock | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C | Button cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D | Lead wire(3M) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| E | Plug, pin(21pin) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| G | Blue, flame-retardant wire (Lead wire) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H | Yellow, flame-retardant wire (Lead wire) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I | Position S / W | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J | Additional 3a3b auxiliary contact | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K | 3Position S / W | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L | CTD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Note)
 PT is available only for G type at the operating AC.

Note)
 T (Truck) is available only for K and B types. (T0 is available for D and G types.)

Accessory option table

| Type | VC type | | | | | | Remarks |
|------|---------|---|---|---|---|---|---------------|
| | Z | D | G | F | K | B | |
| A | | | | | | | |
| B | ● | ● | ● | ● | ● | ● | Latch type |
| C | ● | ● | ● | ● | ● | ● | Latch type |
| D | ● | ● | ● | ● | ● | ● | |
| E | ● | ● | ● | ● | ● | ● | |
| F | ● | ● | ● | ● | ● | ● | |
| G | ● | ● | ● | ● | ● | ● | |
| H | ● | ● | ● | ● | ● | ● | |
| I | ● | ● | ● | ● | ● | ● | |
| J | ● | ● | ● | ● | ● | ● | |
| K | ● | ● | ● | ● | ● | ● | |
| L | ● | ● | ● | ● | ● | ● | Latch type AC |

Note)
 This table is about fuse clip and fuse should be ordered separately.



- Note)
- Accessory 'B' and 'C' are not available at the same time.
 - When accessory 'I' is applied, cradle accessory PS-related items should be added. ('A, B, Q, R, S and T')
 - When accessory 'J' is applied, the auxiliary contact is 6a6b for the fixed type continuous excitation and it is 5a5b for the fixed type latch and lever type.
 - Accessory 'L' is the default setting only for 3.6 / 7.2kV VCS latch type with the operating voltage AC.
 - Accessory 'J' and 'L' are not available at the same time.
 - Accessory 'K' is available for 3.6 / 7.2kV G type and cradle accessory 'C' should be selected.
 - Accessory 'D', 'E', 'G' and 'H' are lead wire for users. When not selected, a basic wire (1.5m) is applied.

12kV body

| | | | | | | | |
|--------------------------|---------------------------|---|------------------------------|--------------------------|------------------------------------|------------------------|--|
| VC | 12 | B | 4 | 4 | E | E | D1 |
| Unique identifier | Rated voltage (kV) | Connection type | Breaking current (kA) | Rated current (A) | Operating method | Measurement No. | Operating voltage |
| VC Vacuum contactor | 12 12 | Z Fixed type K Non-fuse screw type B PF-combined screw type | 4 4 | 4 400 | E Continuous excitation L Latch | E Slsol | D1 DC 110V D2 DC 220V D3 DC 125V A1 AC 110V A2 AC 220V A3 AC 125V |

Note)

1. C0, P0, T0, F00 is the default setting for type Z.
2. C0, P0, F00 is the default setting for type K.

Note)

12kV latch type is available only at the operating voltage DC.

| C3 | P0 | T1 | F11 | BJ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|--------------------|--|-------------------------------|-------------|-------------------|------------------|-------------------------------|-----|---------------------------------|--|--|--|-----|----------------|-----|-------|-----------|-----|----------------|-----|-------|-----------|--|------|-------------|---|---------|---|----------------|---|--------------|---|---------------|---|------------------|---|--------------|---|--|---|--|---|-----------------------------------|---|--|---|--|---|--|
| Fuse checker | PT | Truck | Fuse | Accessory | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C0 None C3 Standard / SBA type (12kV) | P0 None | T1 Earthing switch | <table border="1"> <thead> <tr> <th>Code</th> <th>Description</th> <th>External diameter</th> <th>Assembled length</th> <th>VC rating (Voltage / Current)</th> </tr> </thead> <tbody> <tr> <td>F00</td> <td>When Z, D or K type is selected</td> <td></td> <td></td> <td></td> </tr> <tr> <td>F11</td> <td>DIN type 292mm</td> <td>Φ45</td> <td>358mm</td> <td>12kV 400A</td> </tr> <tr> <td>F12</td> <td>DIN type 442mm</td> <td>Φ45</td> <td>508mm</td> <td>12kV 400A</td> </tr> </tbody> </table> | Code | Description | External diameter | Assembled length | VC rating (Voltage / Current) | F00 | When Z, D or K type is selected | | | | F11 | DIN type 292mm | Φ45 | 358mm | 12kV 400A | F12 | DIN type 442mm | Φ45 | 508mm | 12kV 400A | <table border="1"> <thead> <tr> <th>Code</th> <th>Description</th> </tr> </thead> <tbody> <tr><td>A</td><td>Padlock</td></tr> <tr><td>B</td><td>Button padlock</td></tr> <tr><td>C</td><td>Button cover</td></tr> <tr><td>D</td><td>Lead wire(3M)</td></tr> <tr><td>E</td><td>Plug, Pin(21Pin)</td></tr> <tr><td>F</td><td>Lifting hook</td></tr> <tr><td>G</td><td>Blue, flame-retardant wire (Lead wire)</td></tr> <tr><td>H</td><td>Yellow, flame-retardant wire (Lead wire)</td></tr> <tr><td>J</td><td>Additional 3a3b auxiliary contact</td></tr> <tr><td>M</td><td>Position S / W (Test : 1a1b, Service : 2b)</td></tr> <tr><td>N</td><td>Position S / W (Test : 2a, Service : 2a)</td></tr> <tr><td>O</td><td>Position S / W (Test : 1a1b, Service : 1a1b)</td></tr> </tbody> </table> | Code | Description | A | Padlock | B | Button padlock | C | Button cover | D | Lead wire(3M) | E | Plug, Pin(21Pin) | F | Lifting hook | G | Blue, flame-retardant wire (Lead wire) | H | Yellow, flame-retardant wire (Lead wire) | J | Additional 3a3b auxiliary contact | M | Position S / W (Test : 1a1b, Service : 2b) | N | Position S / W (Test : 2a, Service : 2a) | O | Position S / W (Test : 1a1b, Service : 1a1b) |
| Code | Description | External diameter | Assembled length | VC rating (Voltage / Current) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F00 | When Z, D or K type is selected | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F11 | DIN type 292mm | Φ45 | 358mm | 12kV 400A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F12 | DIN type 442mm | Φ45 | 508mm | 12kV 400A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Code | Description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | Padlock | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B | Button padlock | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C | Button cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D | Lead wire(3M) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| E | Plug, Pin(21Pin) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F | Lifting hook | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| G | Blue, flame-retardant wire (Lead wire) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H | Yellow, flame-retardant wire (Lead wire) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J | Additional 3a3b auxiliary contact | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M | Position S / W (Test : 1a1b, Service : 2b) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| N | Position S / W (Test : 2a, Service : 2a) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| O | Position S / W (Test : 1a1b, Service : 1a1b) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Note)
T (Truck) is available only for K and B types.

Note)

This table is about fuse clip and fuse should be ordered separately.
LS does not have a 12kV fuse, so choose it from other manufacturers.

Accessory option table

| Type | VC type | | | Remarks |
|------|---------|---|---|------------|
| | Z | K | B | |
| A | | ● | ● | - |
| B | ● | ● | ● | Latch type |
| C | ● | ● | ● | Latch type |
| D | ● | ● | ● | - |
| E | ● | ● | ● | - |
| G | ● | ● | ● | - |
| H | ● | ● | ● | - |
| J | ● | ● | ● | - |
| M | | ● | ● | - |
| N | | ● | ● | - |
| O | | ● | ● | - |

Note)

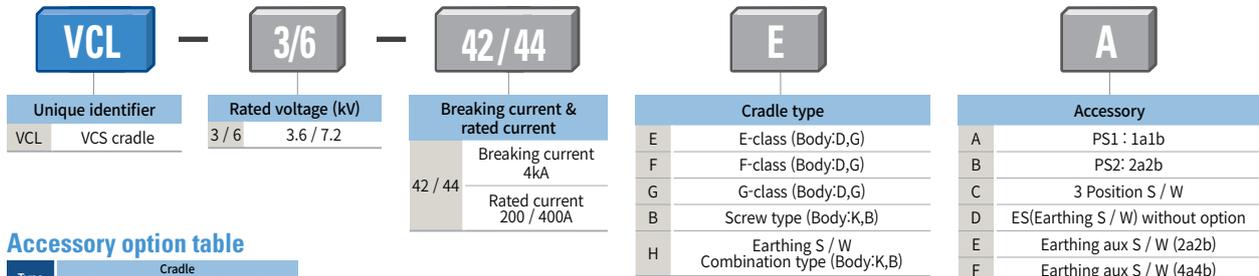
1. Accessory 'B' and 'C' are not available at the same time
2. When accessory 'J' is applied, the auxiliary contact is 6a6b for the fixed type continuous excitation and it is 5a5b for the fixed type latch and lever type.
3. Accessory 'D', 'E', 'G' and 'H' are lead wire for users. When not selected, a basic wire (1.5m) is applied.



Susol Vacuum Contactor

Model classification

3.6/7.2kV cradle



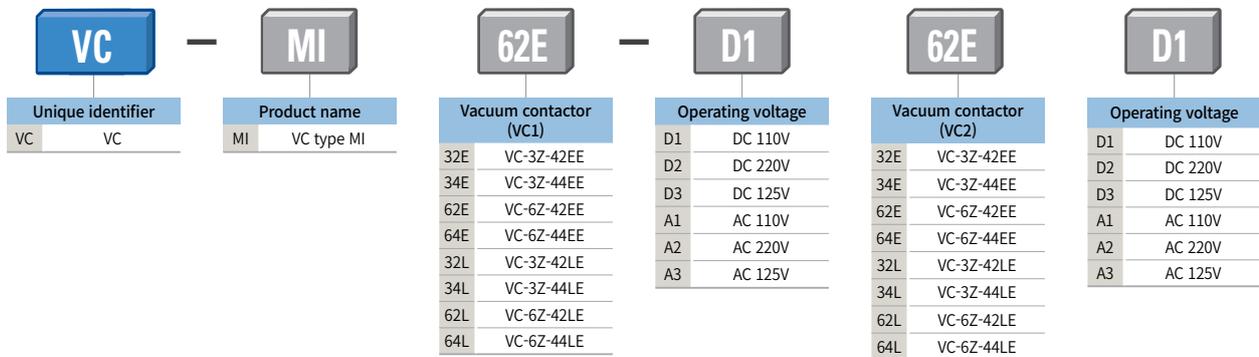
Accessory option table

| Type | Cradle | | | | | |
|------|--------|---|---|---|---|---|
| | E | F | G | M | B | H |
| A | • | • | • | • | • | • |
| B | • | • | • | • | • | • |
| C | | | • | | | |
| D | | | | | | • |
| E | | | | | | • |
| F | | | | | | • |
| G | | | | | | • |
| H | | | | | | • |
| I | | | | | | • |
| J | | | | | | • |
| K | | | | | | • |
| L | | | | | | • |
| M | | | | | | • |
| N | | | | | | • |
| O | | | | | | • |
| Q | • | • | • | • | • | • |
| R | • | • | • | • | • | • |
| S | • | • | • | • | • | • |
| T | • | • | • | • | • | • |

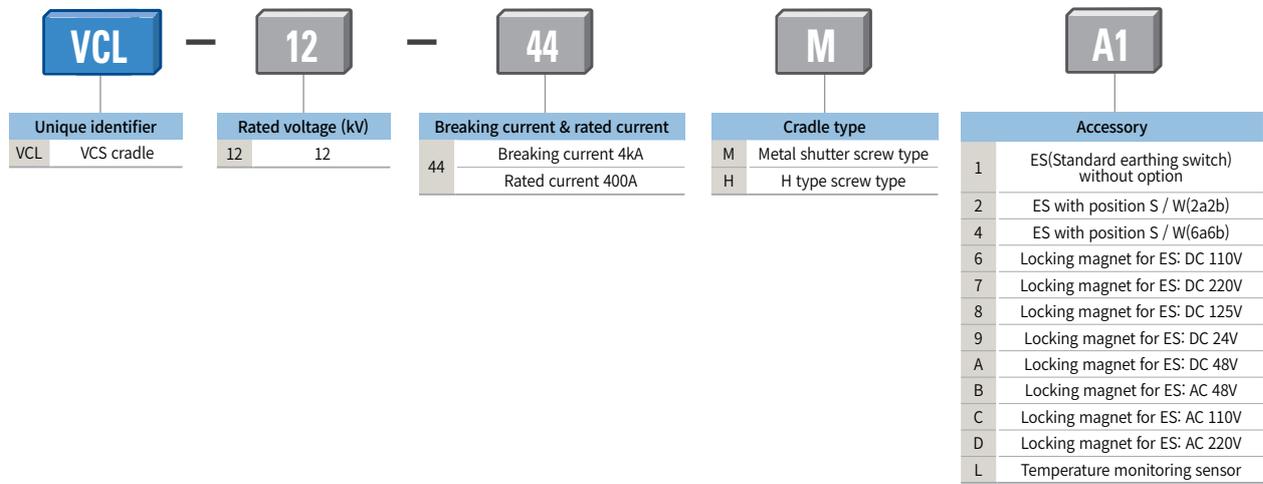
Note

- When applying accessories 'A, B, Q, R, S, T', body accessory 'I' should be selected.
- Accessory 'C' is available only for G-class cradle and body accessory 'K' should be selected.
- Accessory 'D ~ O' is available only for H-type cradle.
- When H-class is chosen, one of the accessories, 'D', 'E' or 'F' should be selected.
- When M-class is chosen, the body truck option should be T2.

Flowchart on ordering MI models for 7.2kV VC



12kV cradle



Note)
Accessories are available only for H type cradle.



Susol Vacuum Contactor

External structure

3.6/7.2kV lever type

- ① Cradle
- ② Fuse case
- ③ Fuse checker
- ④ Front cover
- ⑤ Aux switch
- ⑥ On/Off display
- ⑦ Counter
- ⑧ Manual trip button
- ⑨ Interlock lever
- ⑩ Standard racking-in/Out truck



12kV screw type

- ① Fuse case
- ② Front cover
- ③ On/Off display
- ④ Counter
- ⑤ Manual trip button
- ⑥ Racking-in/Out handle
- ⑦ Racking-in/Out handle mounting hole
- ⑧ Test/Run position checker
- ⑨ Truck for external racking-in/Out



Internal structure

Main circuit

The main circuit part supports the VI main circuit terminal and shunt inside the three-phase, integral insulating mold, and the VI's operating part is connected to the operating equipment with the insulating rod. The VI's operating part is switched on and off by the operating devices in the lower section based on the insulating rod.

Operating equipment

The operating equipment is a simple structure taking into account its frequent use and long life. A link equipment is not used and an electromagnet, operating mainly the core rotates the cross bar and the lever fixed to the axis moves up and down, in order to switch (Make and break) the contact based on an appropriate level of pressure, stabilizing its operation.

Operating method

Continuous excitation

The operating core is suctioned into the fixed core only when the operating coil is under excitation so as to turn on the contactor. When the excitation ends, the operating coil rotates based on the cross bar (Spring) to open and the contactor turns off.

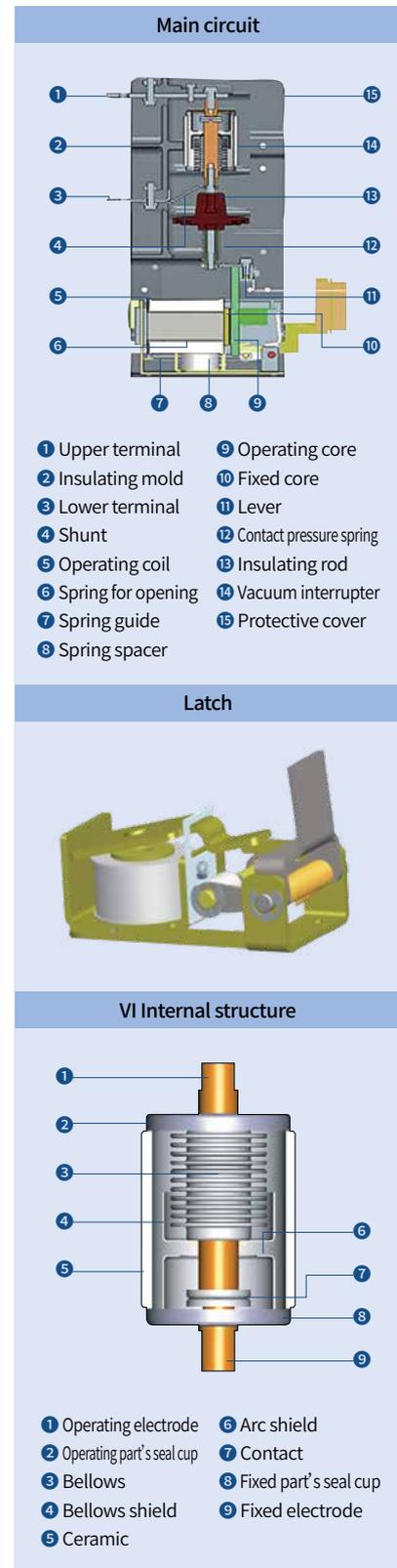
Latch type

This method has a latch to disconnect the coil current and to mechanically hold the equipment after closing (Making) is completed. The trip coil is excited and the latch is mechanically disconnected to turn off the contactor. In case of manual tripping, the manual trip button should be turned on to disconnect the latch and trip the contactor.

| Model | Operating method | Control voltage (V) | Making current (A)/ Making time (ms) | Trip current (A)/ Trip time (ms) | Holding current (A)/ Holding time (ms) |
|-------------------------|--------------------------------|---------------------|---|-------------------------------------|---|
| VC-3/6□- 42/44 E/L E | Continuous excitation type (E) | DC / AC 110V | 3 / 100 | - | 0.6/40 |
| | | DC / AC 125V | 3 / 100 | - | 0.6/40 |
| | | DC / AC 220V | 2 / 100 | - | 0.6/40 |
| | Latch type (L) | DC 110V | 5 / 100 | 3 / 35 | - |
| | | DC 125V | 5 / 100 | 3 / 35 | - |
| | | DC 220V | 10 / 100 | 6 / 35 | - |
| | Latch type (L) (With CTD) | AC 110V | 5 / 100 | 5 / 35 | - |
| | | AC 125V | 5 / 100 | 5 / 35 | - |
| | | AC 220V | 10 / 100 | 10 / 35 | - |
| VC-12□- 44 E/L E | Continuous excitation type (E) | DC / AC 110V | 7 / 145 | - | 1.2 / 40 |
| | | DC / AC 125V | 7 / 145 | - | 1.2 / 40 |
| | | DC / AC 220V | 7 / 145 | - | 1.2 / 40 |
| | Latch type (L) | DC 110V | 7 / 160 | 3 / 40 | - |
| | | DC 125V | 7 / 160 | 3 / 40 | - |
| | | DC 220V | 7 / 160 | 6 / 40 | - |

VI: Vacuum interrupter

- The arc generated between the contact surfaces diffuses on the plate-shaped contact to prevent the contact from being locally heated and damaged.
- The metal vapor that forms the arc condenses on the shield and the arc disappears at current zero, stopping the metal vapor to occur. The generated metal vapor quickly condenses and the contact restores insulation, enduring the recovery voltage (Transient recovery voltage).



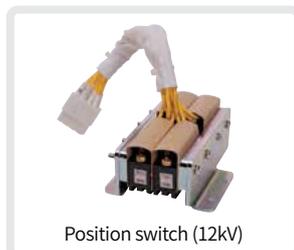
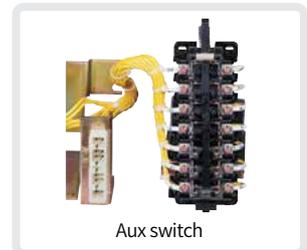
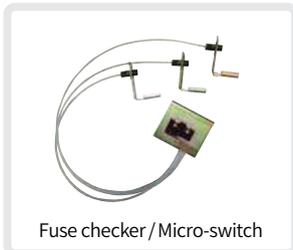
Susol Vacuum Contactor
Auxiliary devices (Body)

3.6/7.2/12kV

Susol VC (Vacuum contactor) offers a wide range of auxiliary devices depending on your preferences. the auxiliary devices attached the VCS body will upgrade its functions.



Auxiliary devices



Note)
 PT and CTD are only available for 3.6 / 7.2kV.

Auxiliary devices (Cradle)

3.6/7.2/12kV

The auxiliary devices attached to the cradle will upgrade its function. Susol VC (Vacuum contactor) offers a wide range of auxiliary devices depending on your preference.



E-class cradle

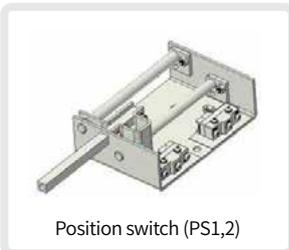


F-class cradle

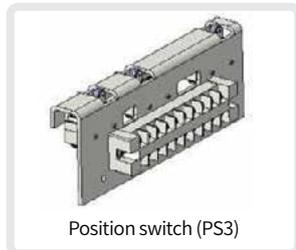


G-class cradle

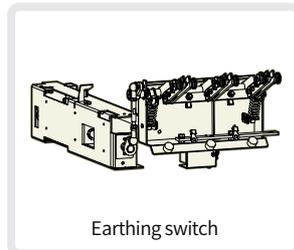
Auxiliary devices



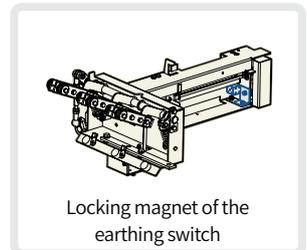
Position switch (PS1,2)



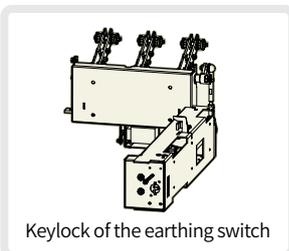
Position switch (PS3)



Earthing switch



Locking magnet of the earthing switch



Keylock of the earthing switch

Note)

1. The position switch can be only assembled with 3.6 / 7.2kV cradles. (PS3 only with G-class cradles.)
2. The auxiliary devices related to the earthing switch can be only assembled with H-class cradles.

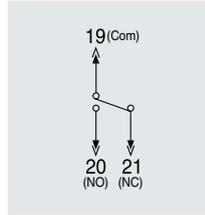
Susol Vacuum Contactor

Auxiliary devices

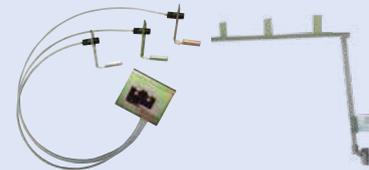
Fuse checker / Micro-switch

The fuse checker operates upon fusing and mechanical signals are output. The micro-switch is a part of the fuse checker that converts the mechanical signal input into the electrical signal output.

※ It is used for displaying alarm messages on fusing.



Fuse checker / Micro-switch



3.6/7.2kV

12kV

PT: Potential transformer (PT)

PT: Potential transformer

The potential transformer is only available for the combination lever type (G). Its rating is 3.6 / 7.2kV with a capacity of 100Var or 200Var. Up to 2 units can be attached. PT supplies VCS control power and only VCS control voltage AC is available.

| Rated voltage (V) | Secondary voltage (V) | Class | Burden (VA) | Frequency (Hz) |
|-------------------|-----------------------|-------|-------------|----------------|
| 3300 / 6600 | 110 / 220 | 1 | 100 / 200 | 50 / 60 |



Fuse clip

Fuse clip

The fuse clip is used to attach the fuse link to the holder or remove it from the holder. Its size varies depending on the fuse type, so pay attention to its size.

(There is only one type (D45) for DIN type clip.)



Aux switch

Aux switch

The auxiliary contact is either 2a2b or 3a3b.

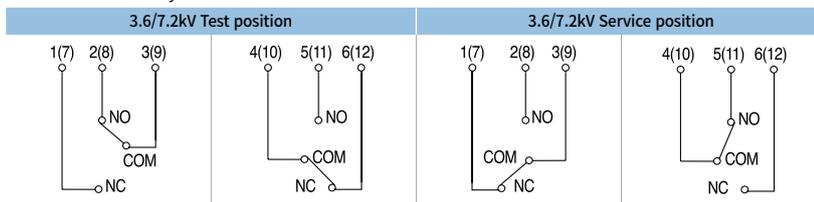


Position switch

Position switch

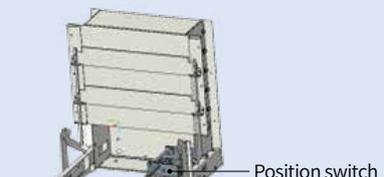
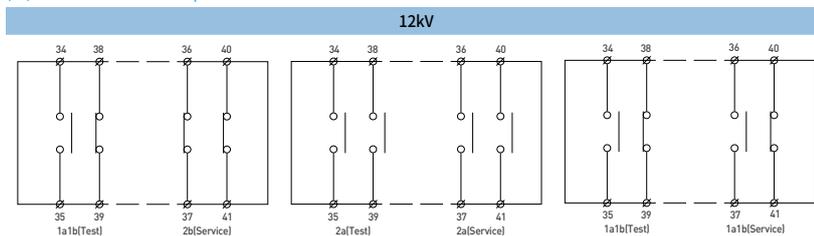
It is a device that shows the body position upon racking in and out. Signals are sent to the terminal block from each position using the micro-switch. Its position can be checked from remote places.

For 3.6 / 7.2kV models, the position switch are installed on the cradle and for 12kV model, it is installed on the body.

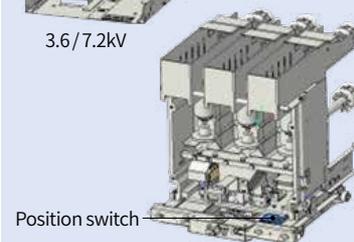


(Note)

() The number inside the parenthesis is the contact number for PS2.



3.6 / 7.2kV



Position switch

12kV

CTD (Condensor trip device)

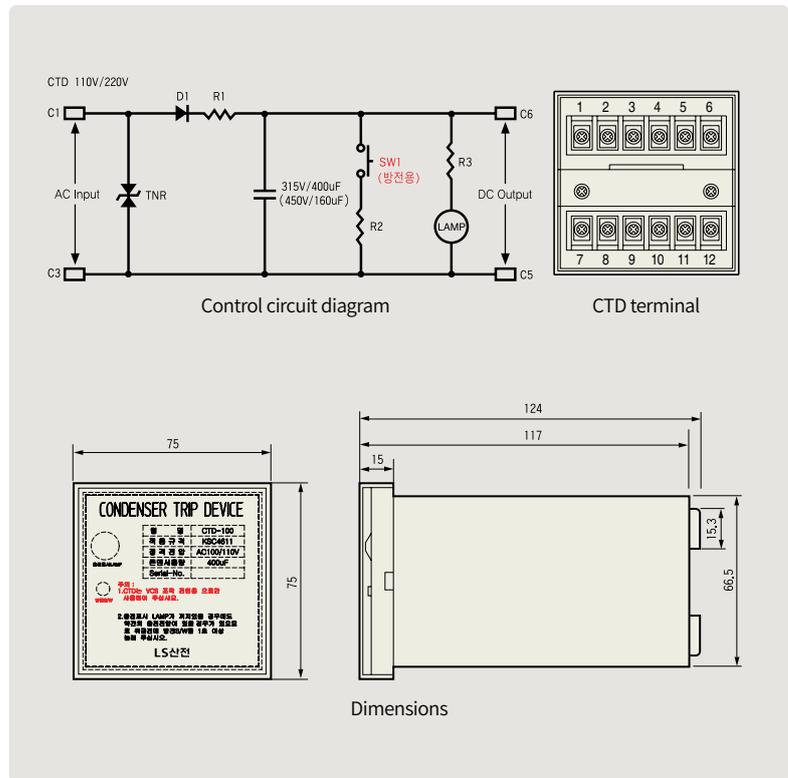


For latch type AC operation, the CTD is built in so that tripping is possible within 30 seconds even under instantaneous interruption. However, after interruption, an automatic trip circuit should be arranged separately on the panel.

| Rating | Specifications | |
|---------------------------|-----------------|-----------------|
| Model | CTD - 100 | CTD - 200 |
| Rated input voltage (V) | AC 100 / 110 | AC 200 / 220 |
| Frequency (Hz) | 50 / 60 | 50 / 60 |
| Rated impulse voltage (V) | 140 / 155 | 280 / 310 |
| Charging time | 5second within | 5second within |
| Available trip time | 30second within | 30second within |
| Input voltage regulation | 85%~110% | 85%~110% |
| Condenser capacity (μF) | 400 | 160 |

Note)

The CTD is assembled on the left side of the VCS as a frontal reference. Please refer to P35 for the outer dimensions assembled in the product.



Fuse case

It is made of BMC for 3.6 / 7.2kV models and nylon for 12kV models. Safety has been improved with its excellent dielectric strength.

Note)

Available for fuse-combined types



Counter

It is a device that mechanically displays the number of On / Off operations in 5-digit display.



Bushing

It is a mono-block bushing that is applied to lever-type cradles. It demonstrates a superb performance with its improved dielectric strength.

Note)

Available for G, B, M and H-class cradles.



Test / Run position checker

Position of the body racking in and out is visually displayed on this device.

Note)

Available for external racking-in/out



Truck for external racking-in / Out

It is a screw-type racking-out device for the user safety. It allows the user to rack in and out outside the panel. It is only available for the single lever and power fuse-combined types.

Note)

Available for K and B types.



On / Off display

Power On / Off status is visually displayed.



Racking-in / Out handle

It is a refraction-type rack-in / Out handle applied to the truck for external racking-in / Out. When K or B-type VCS is used, the screws are turned for racking in and out.



Check display

The fuse appearance and state may be checked from 3.6 / 7.2kV fuse-combined types (G, B and F types).

Susol Vacuum Contactor

Auxiliary devices

Padlock & door racking interlock

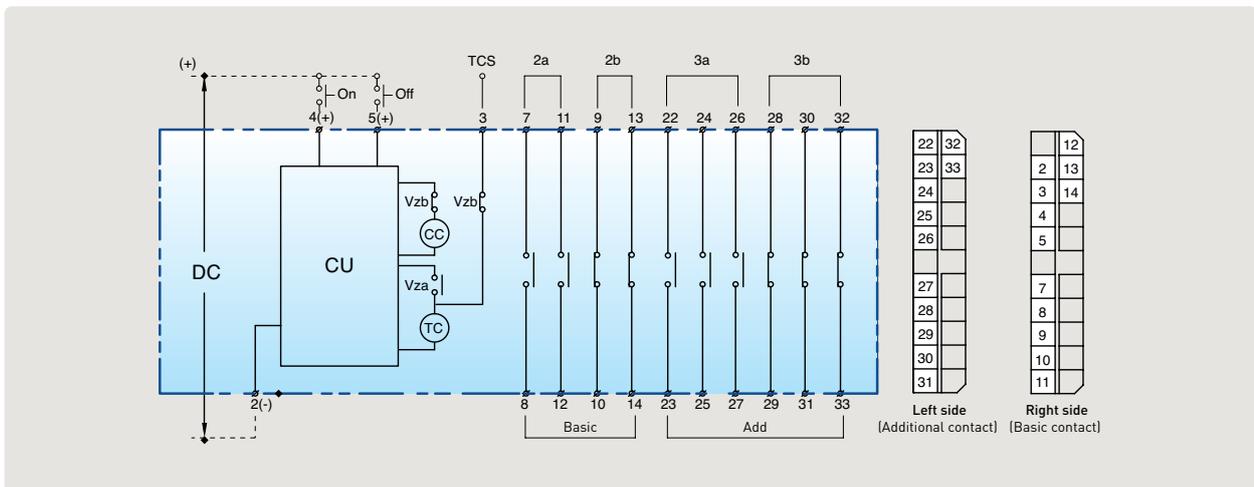


- When installing the key according to the position of the padlock on the PNL door, it is possible to perform racking-in / Out only when the door is completely closed.
- When racking-in / Out is needed with the door open, a handy lever mounted on the body's handle insertion part should be inserted to the hole at the lower section of door lock.
- There is a locking padlock device that prevents racking-in / Out at the test and service modes using a key.



Trip coil monitoring contact

- It is a contact that monitors the trip coil.
- The trip coil monitoring contact display terminal is connected to the trip coil monitoring relay to monitor the trip coil status.
 - When the trip coil is normal: Closed circuit
 - When the trip coil is damaged: Open circuit
 - 1) Monitoring the trip coil at the closing state
 - 2) Monitoring the trip coil at the trip state
- The coil test unit is also available for coil testing. It is parallel-connected to the trip coil operating switch.
- No power should be applied to the trip coil monitoring contact.



Button cover



Push bar

- It is a cover that protects the On / Off button to prevent accidents that may occur during VC operation.
- Operates only with the push bar.

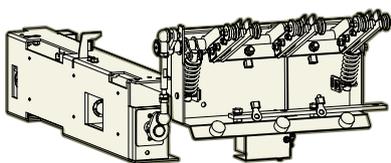
Button padlock



- It is a device that prevents the On / Off button be manually pushed by user's mistake.
- At the button lock mode, manual closing / Tripping is not possible.



Earthing switch



- It is a safety device to discharge the load part's charging current upon maintenance of the switchgear at the VC's test and racking-out states. It can only be installed on the earthing truck of the K and B types.

* Please refer to the User Manual for further details on operation of the earthing switch and related auxiliary devices.

* Applied standard: IEC 62271-102

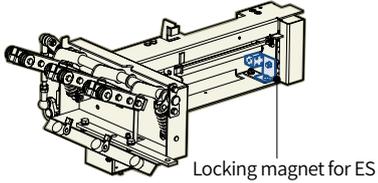


Earthing switch

Susol Vacuum Contactor

Auxiliary devices

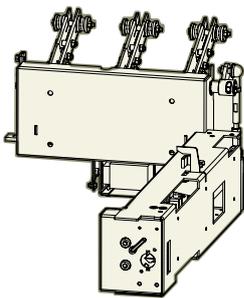
Locking magnet of earthing switch



- It applies only when the earthing switch is used. It is an auxiliary device that allows the earthing switch to open and earth itself after the control power is applied to its locking magnet.
- Please check whether the control power is input or not before opening or earthing the earthing switch installed with the locking magnet.
- Applicable control voltage
 - DC 24, 48, 110, 125, 220V
 - AC 48, 110, 220V



Keylock of earthing switch



- It is a standard auxiliary device applied only when the earthing switch is used. It has two interlock functions.
 - 1) Interlock maintaining the open state
 - 2) Interlock maintaining the earthing state



Racking-in / Out operation

Lever (D, G) type

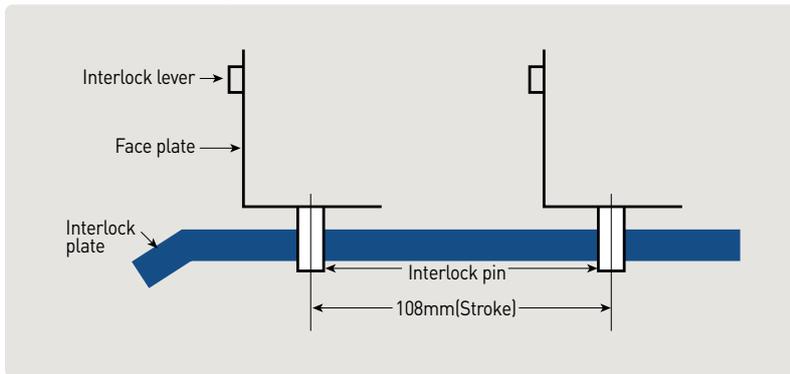
Racking in

1. Check whether the contactor is at the trip mode (Open). (Test position)
2. Lift the interlock lever and rack in about 50mm.
3. After racking in, rack in the body until it reaches the run position without lifting the interlock lever.

Racking out

1. Check whether the contactor is at the trip mode (Open). (Run position)
2. Lift the interlock lever. (The interlock will be cancelled when the lever is lifted.)
3. Rack out the body until it reaches the test position.

Cross-sectional drawing of test /Run position



Screw (K, B) type

Racking in

1. Hold both levers at the lower section of the contactor with two hands.
2. Pull the levers and then push them forward.
3. Install the handle.
4. Turn the handle clockwise to move forward. (About 11 turns)
5. When it reaches the access point, the racking-in / Out handle idles and the contactor no longer racks in.

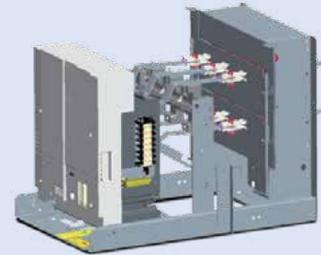
Racking out

1. Check whether the contactor is at the trip mode (Open). (Run position)
2. Insert the racking-in / Out handle in the handle mounting hole.
3. Turn the handle counterclockwise to rack out to the test position.
4. When it reaches the test position, the racking-in / Out handle idles.

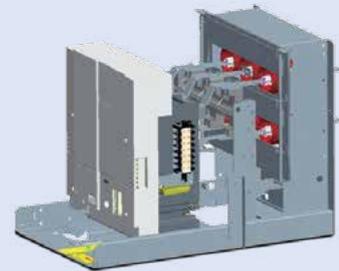
Note)

Please check the power status when racking in and out.

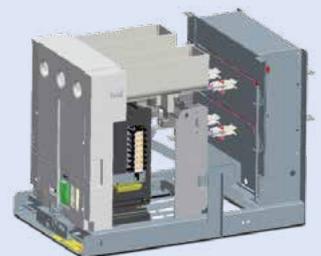
Test position



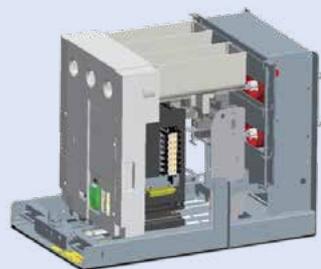
Run position



Test position

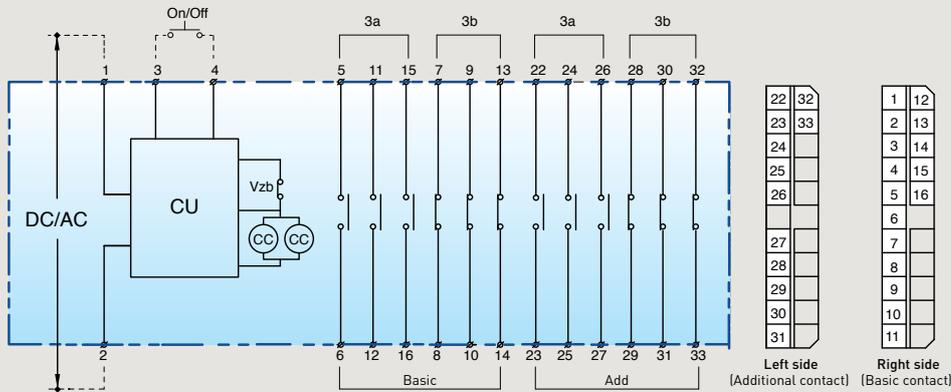


Run position



Control circuit diagram (3.6 / 7.2 / 12kV)

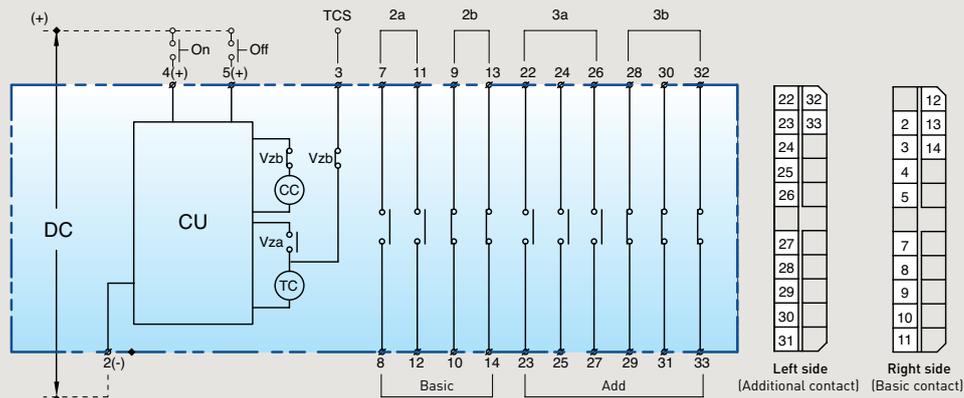
Continuous excitation (DC/ AC 110~220V): Fixed type



Apply power to terminals #1 and #2.
Make and break using #3 and #4 terminal contacts.

Do not perform insulation testing on power supply terminals.
Continuously fixed: 1, 2, 3 and 4

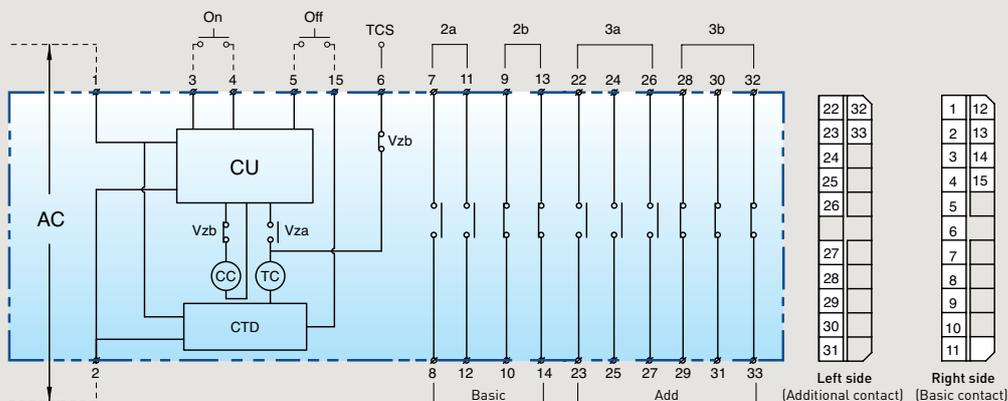
Latch type (DC 110~220V): Fixed type



When closing: Make and break using terminals #4(+) and #2(-).
When tripping: Make and break using terminals #5(+) and #2(-).

Do not perform insulation testing on power supply terminals. Do not apply power to the TCS line.
Instantaneously (latch) fixed: 2, 4 and 5

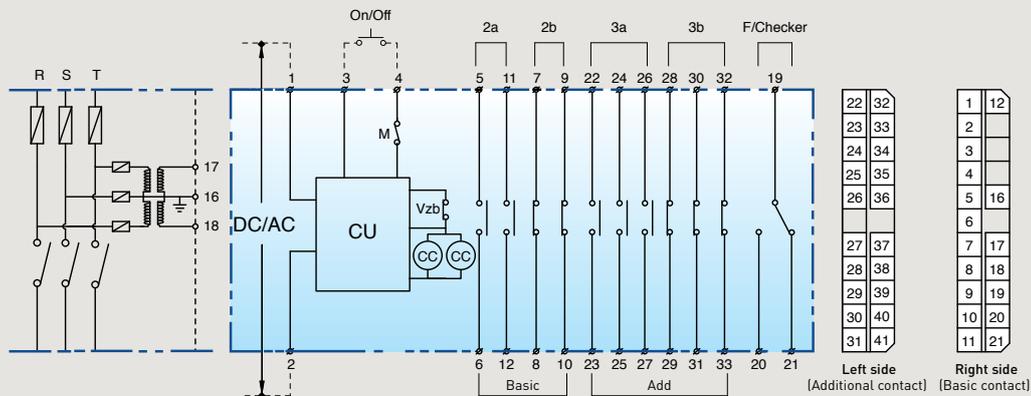
Latch type CTD (AC 110~220V): Fixed type (Only for 3.6 / 7.2kV models)



Apply power to terminals #1 and #2.
When closing): Make and break using #3 and #4 terminal contacts.
When tripping): Make and break using #5 and #15 terminal contacts.

Do not perform insulation testing on power supply terminals.
Instantaneous CTD: 1, 2, 3, 4, 5 and 15
Do not apply power to the TCS line.

Continuous excitation (DC / AC 110~220V): Lever type

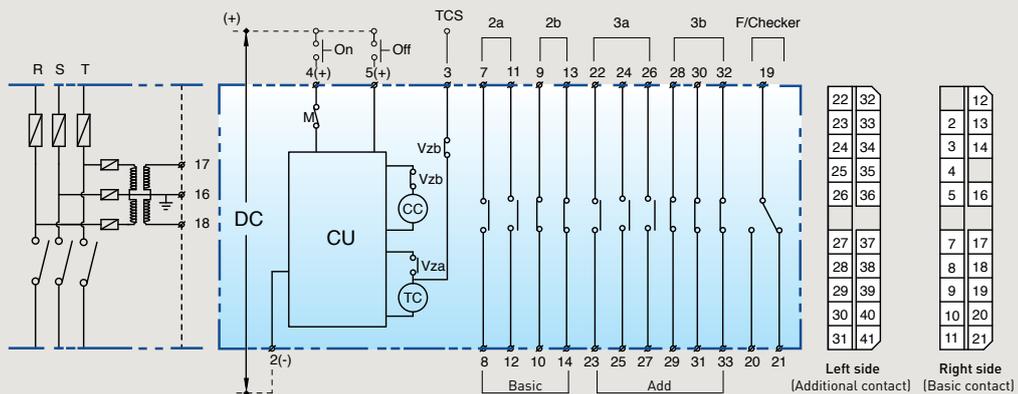


Apply power to terminals #1 and #2.
Make and break using #3 and #4 terminal contacts.

Do not perform insulation testing on power supply terminals.
Continuous: 1, 2, 3 and 4

The additional contact housing's No.34~41 is 12kV Position Switch Numbers.

Latch type (DC 110~220V): Lever type

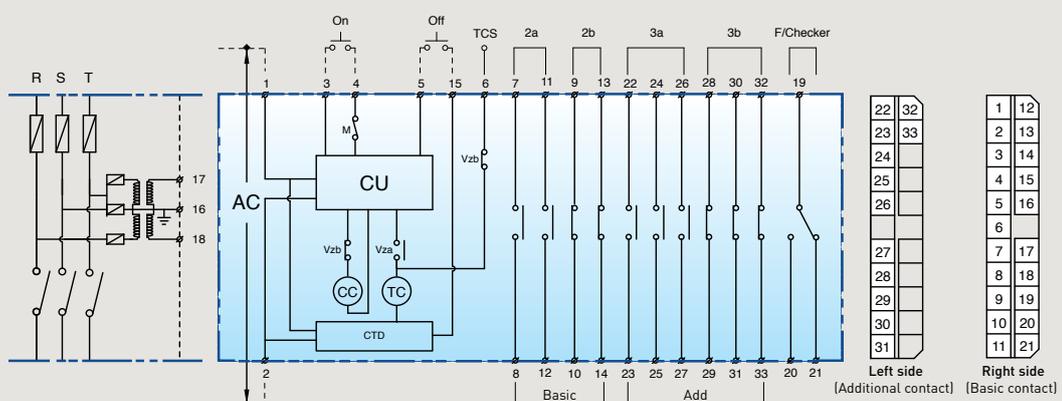


When closing: Make and break using terminals #4(+) and #2(-).
When tripping: Make and break using terminals #5(+) and #2(-).

Do not perform insulation testing on power supply terminals.
Instantaneous (latch): 2, 4 and 5

Do not apply power to the TCS line.
The additional contact housing's No.34~41 is 12kV Position Switch numbers.

Latch type CTD (AC 110~220V): (Only for 3.6/7.2kV models)

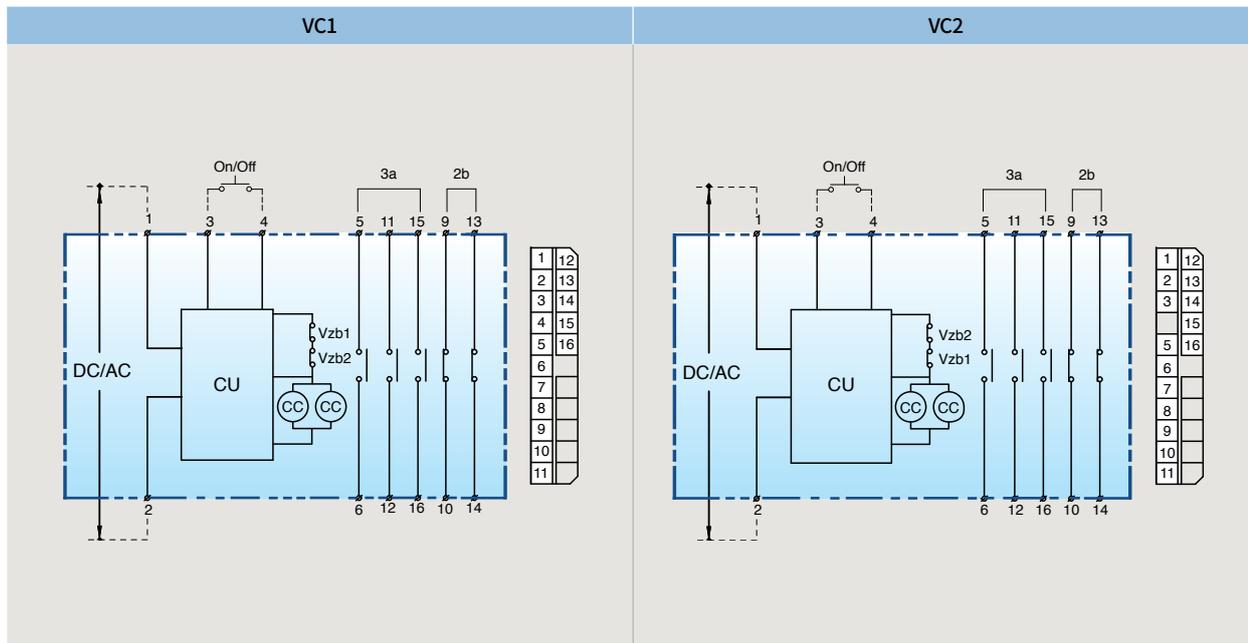


Apply power to terminals #1 and #2.
When closing: Make and break using #3 and #4 terminal contacts.
When tripping: Make and break using #5 and #15 terminal contacts.

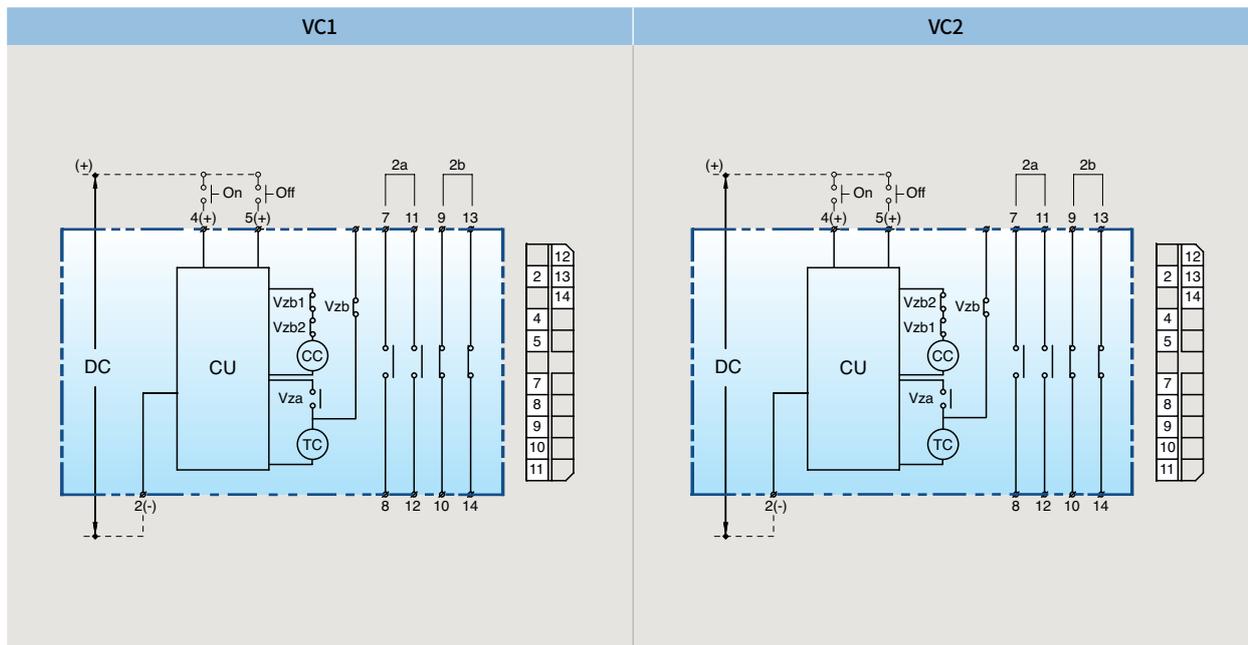
Do not perform insulation testing on power supply terminals.
Instantaneous CTD: 1, 2, 3, 4, 5 and 15
Do not apply power to the TCS line.

Control circuit diagram (3.6 / 7.2kV mechanical interlock type)

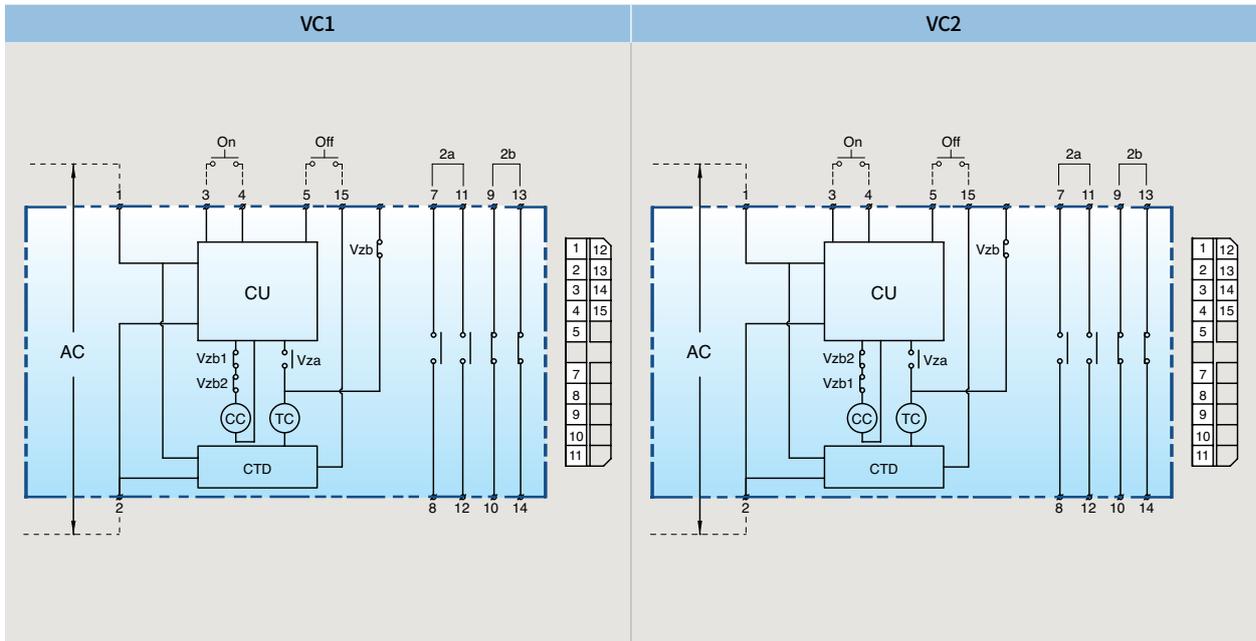
Continuous excitation (DC / AC 110~220V): Fixed type



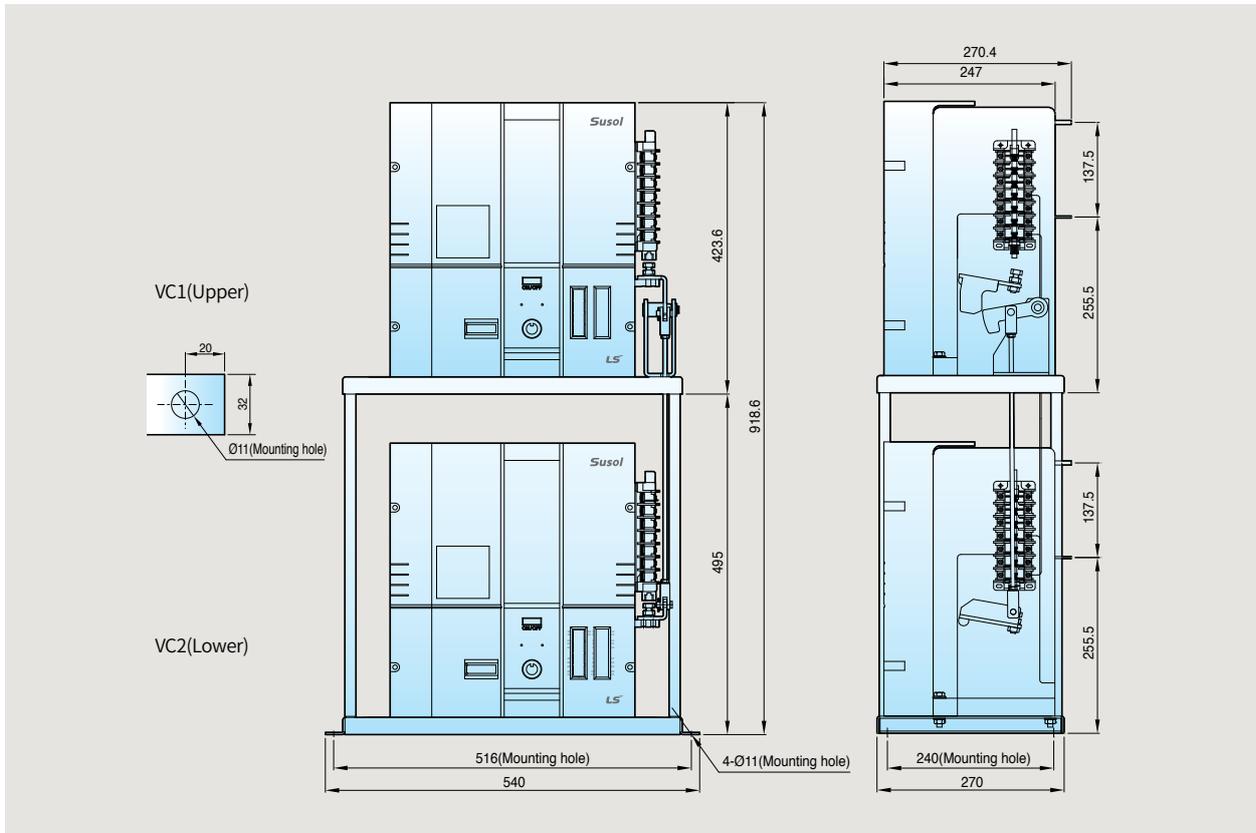
Latch type (DC 110~220V): Fixed type



Latch type CTD(AC 110~220V): Fixed type



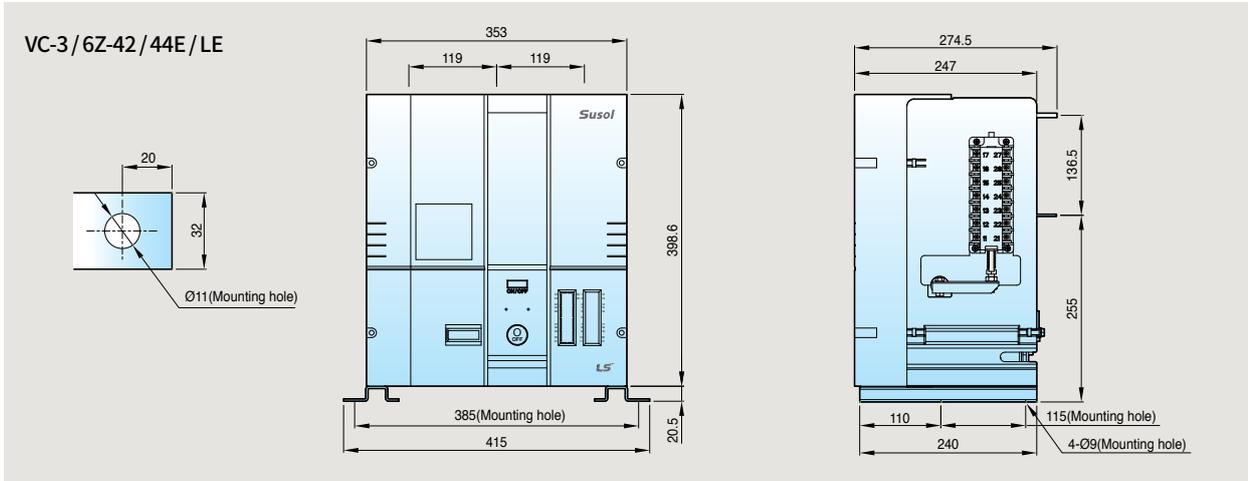
Outside drawing on mechanical interlock type



Susol Vacuum Contactor
3.6/7.2kV body-dimensions

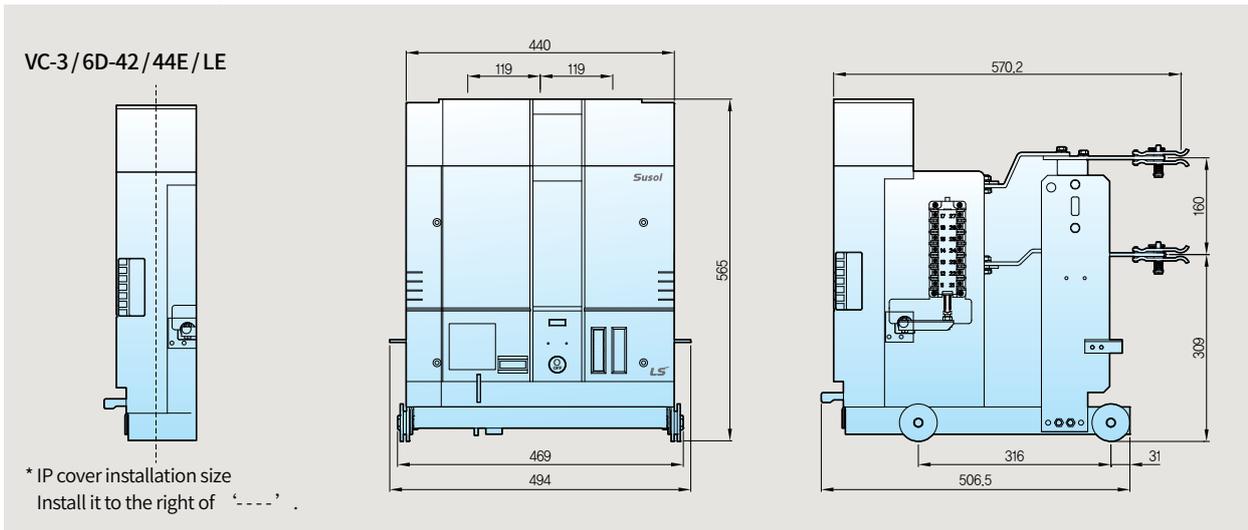
Fixed type

(Unit: mm)



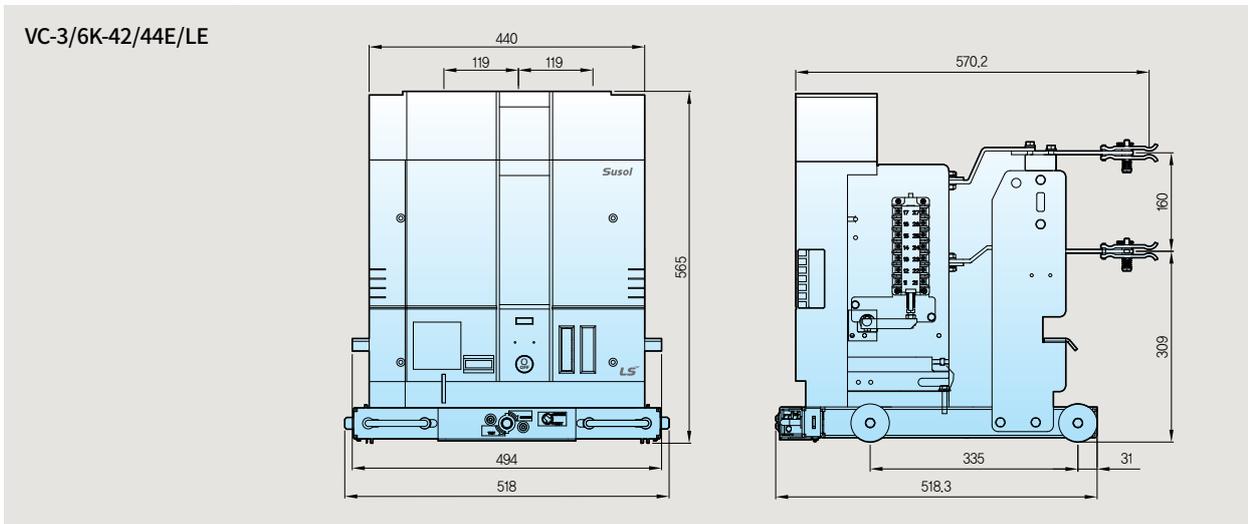
Non-fuse lever type

(Unit: mm)



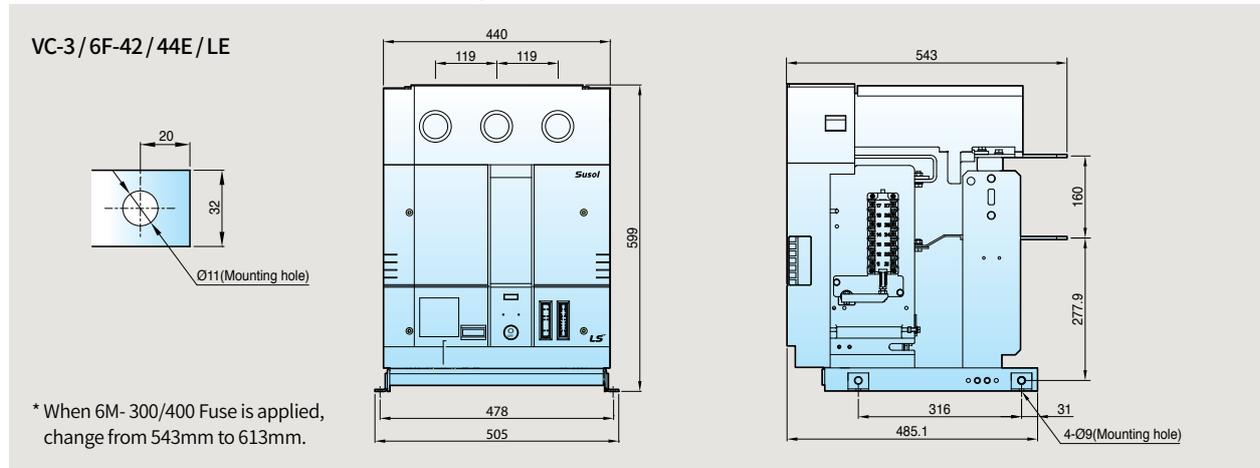
Non-fuse screw type

(Unit: mm)



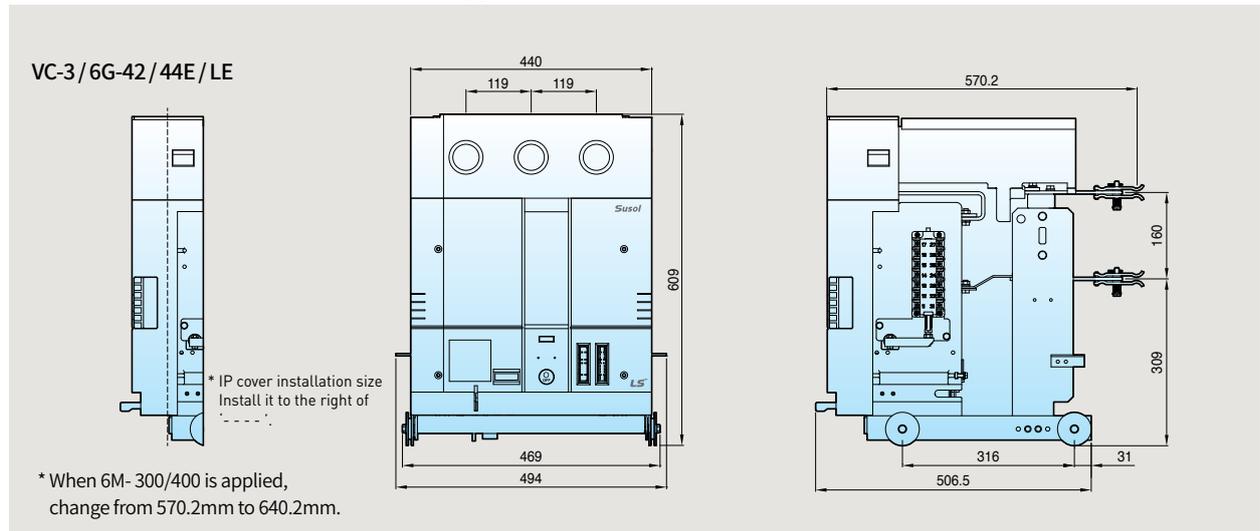
Fuse-combined (Combination) fixed type

(Unit: mm)



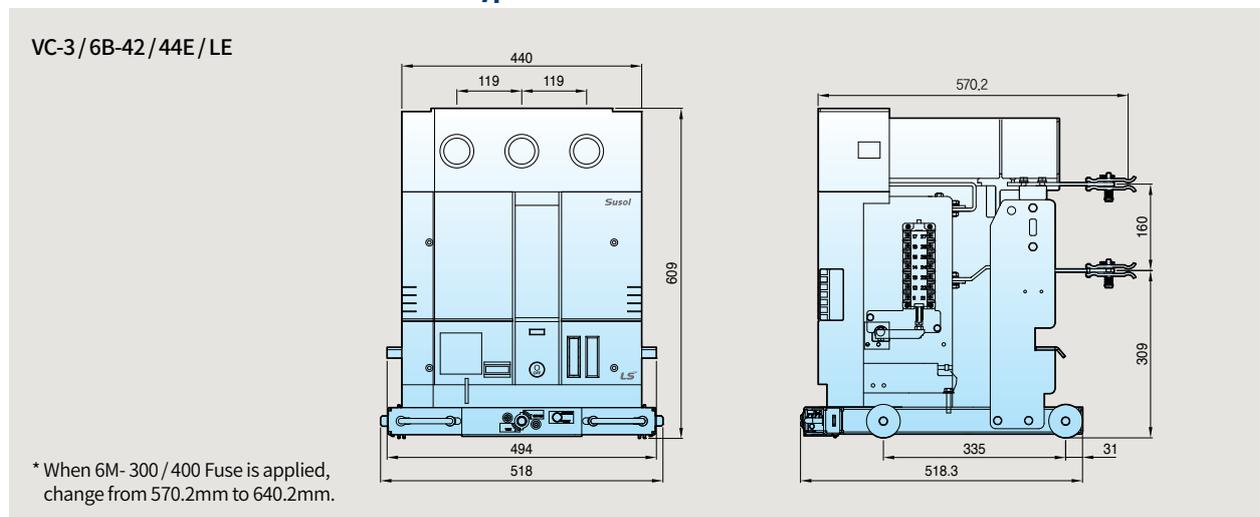
Fuse-combined (Combination) lever type

(Unit: mm)



Fuse-combined (Combination) screw type

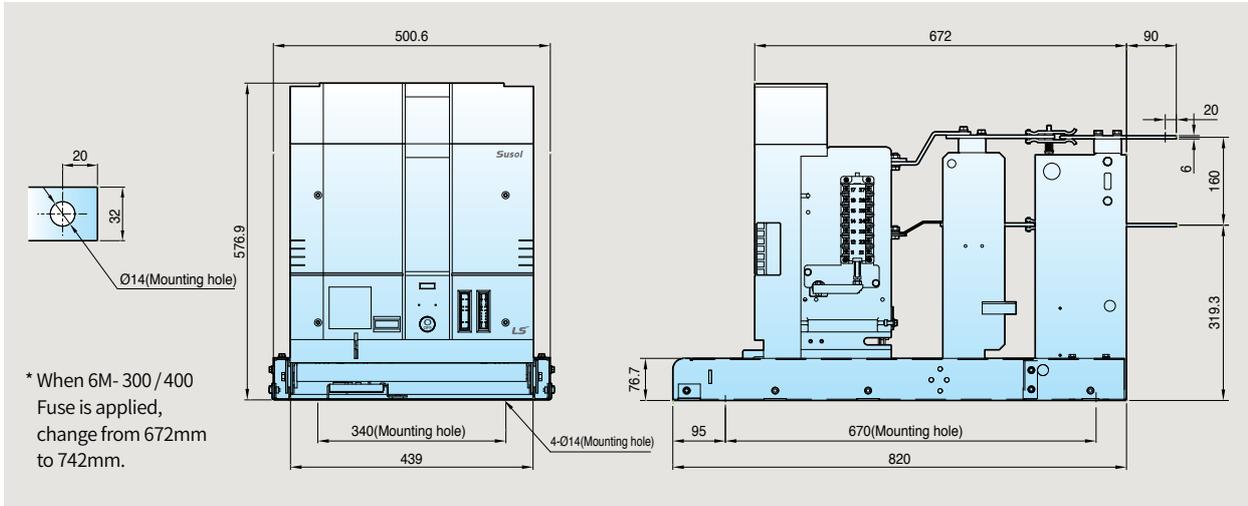
(Unit: mm)



3.6/7.2kV cradle – dimensions

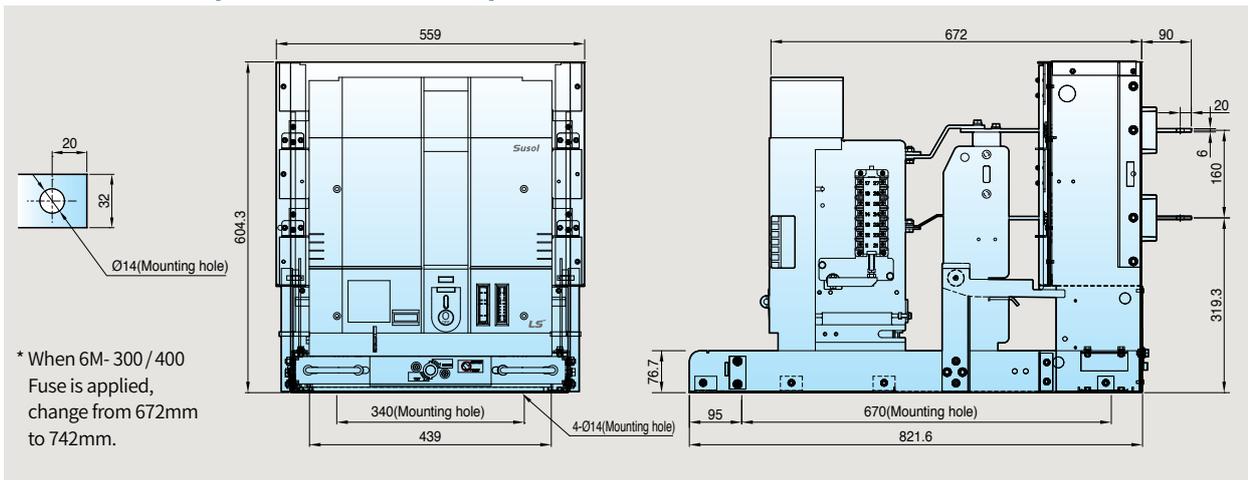
E-class cradle type (Non-fuse lever type)

(Unit: mm)



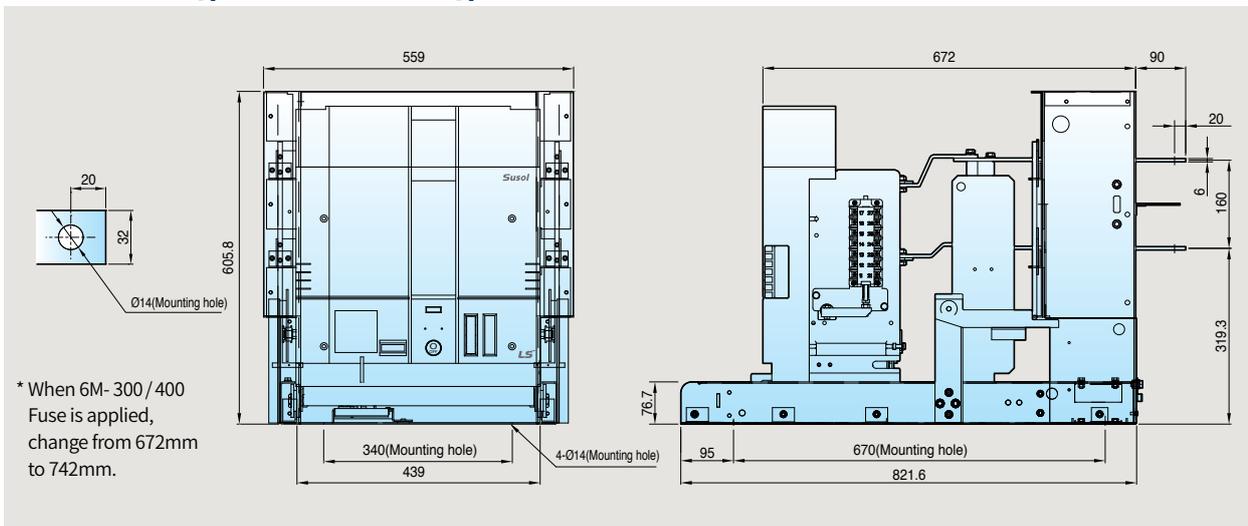
B-class cradle type (Non-fuse screw type)

(Unit: mm)



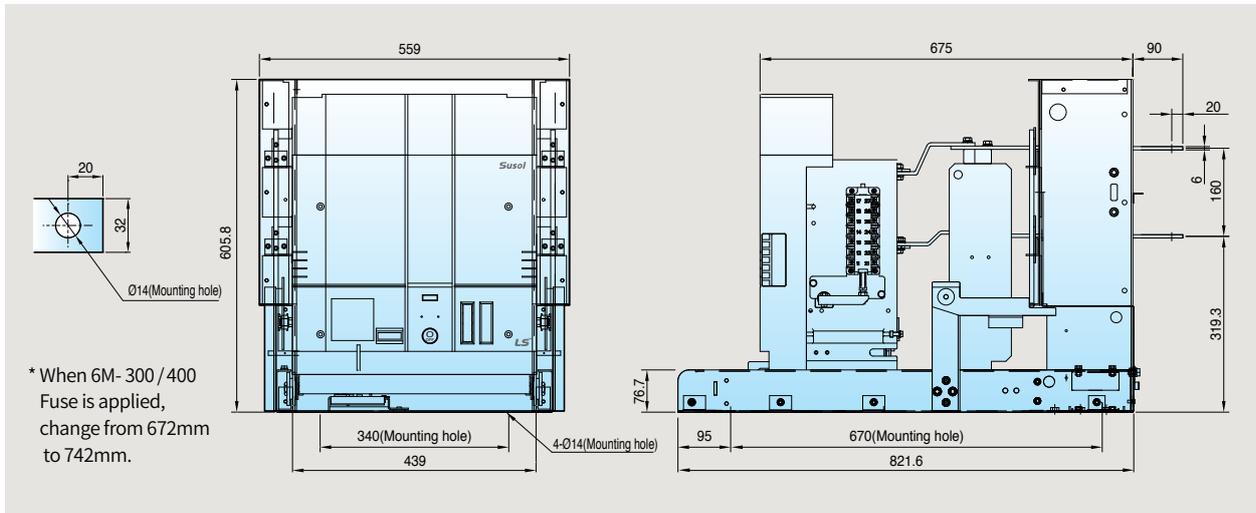
F-class cradle type (Non-fuse lever type)

(Unit: mm)



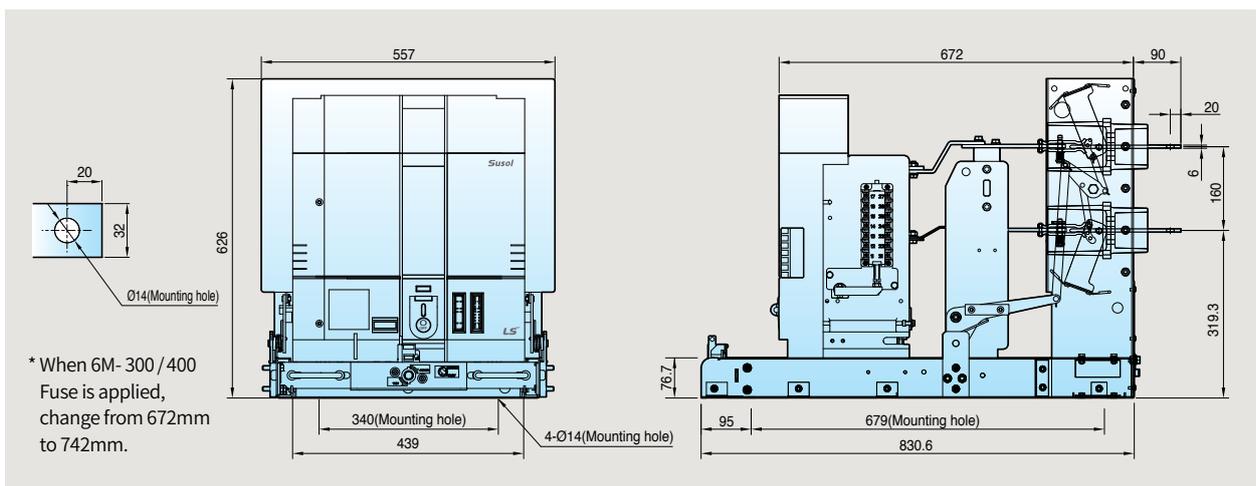
G-class cradle type (Non-fuse lever type)

[Unit: mm]



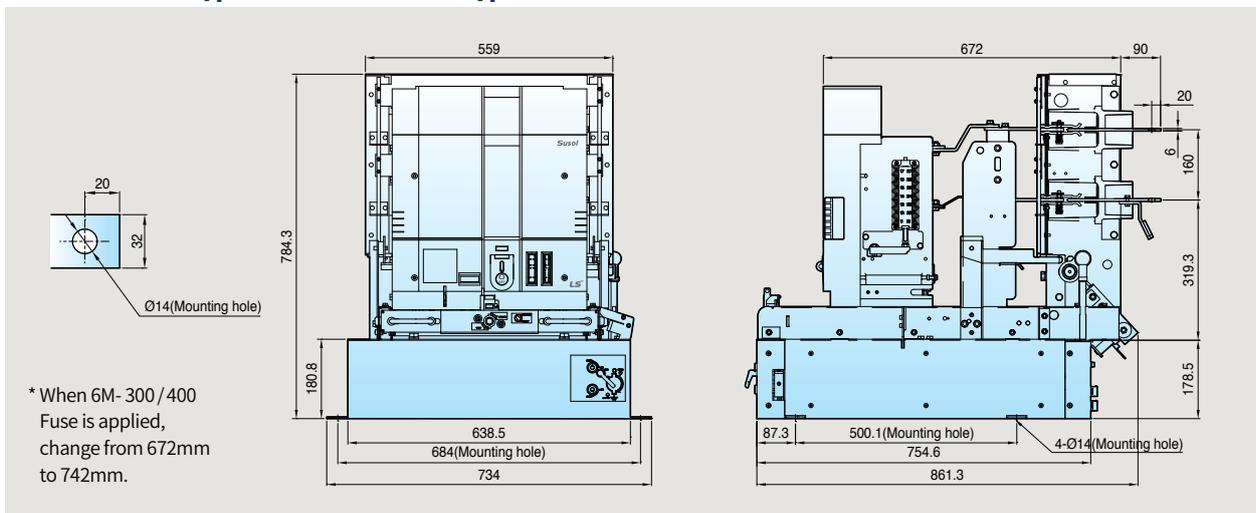
M-class cradle type (Non-fuse screw type)

[Unit: mm]



H-class cradle type (Non-fuse screw type)

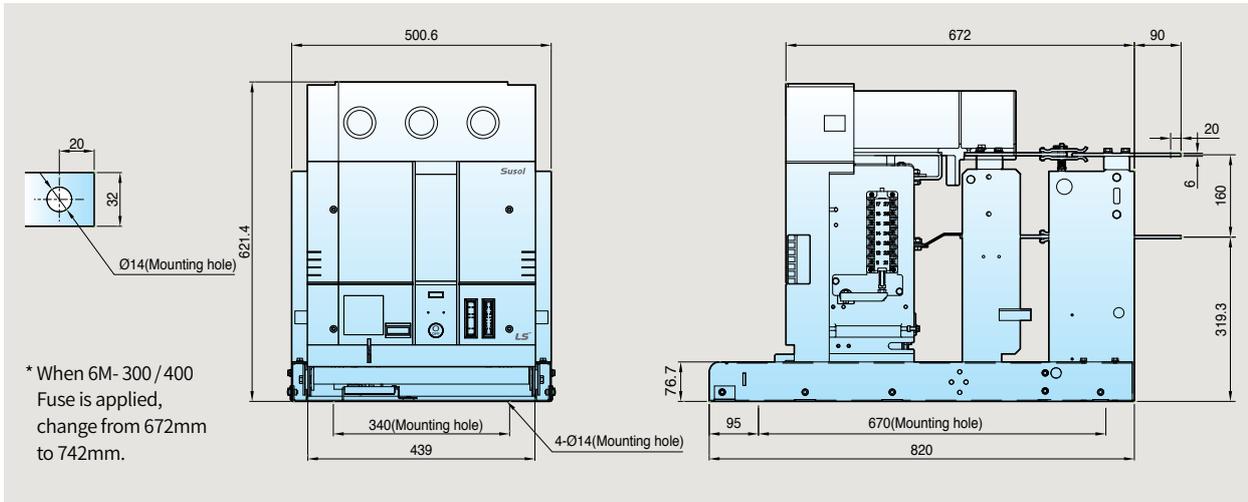
[Unit: mm]



3.6/7.2kV cradle-dimensions

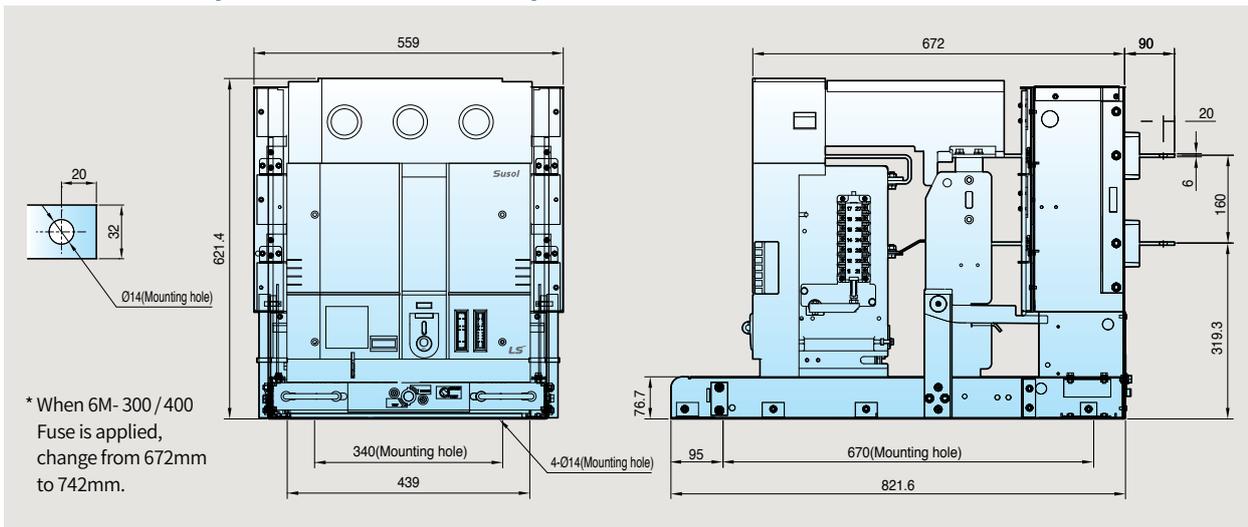
E-class cradle type (Combination lever type)

(Unit: mm)



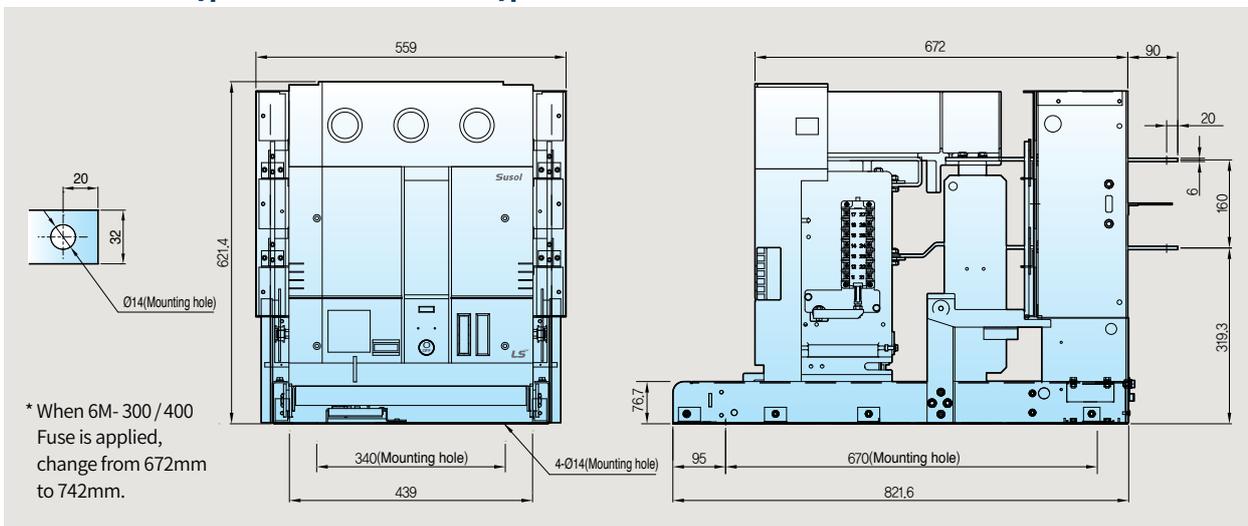
B-class cradle type (Combination screw type)

(Unit: mm)



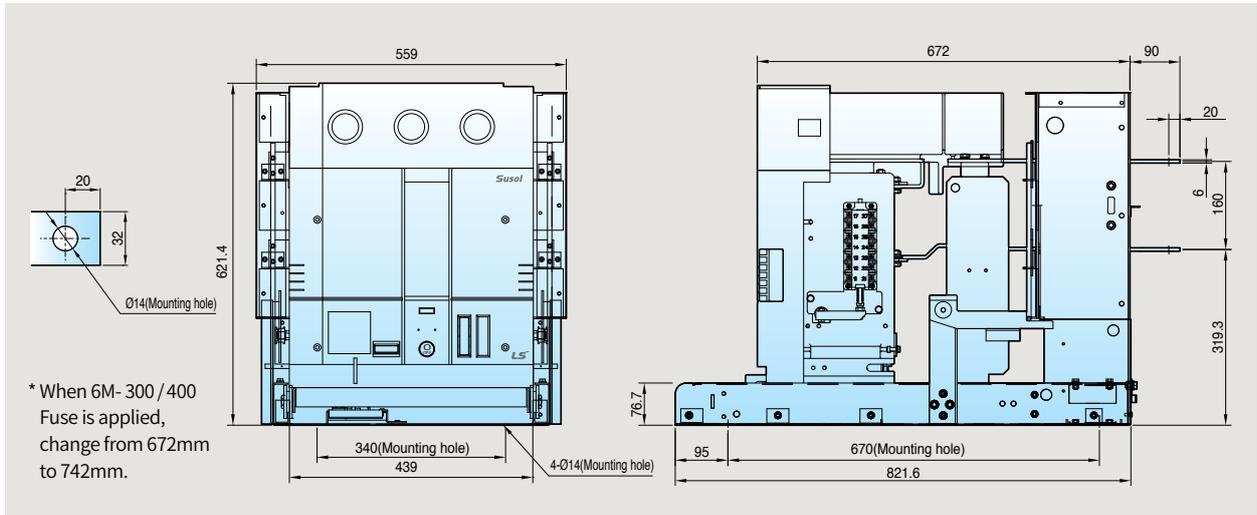
F-class cradle type (Combination lever type)

(Unit: mm)



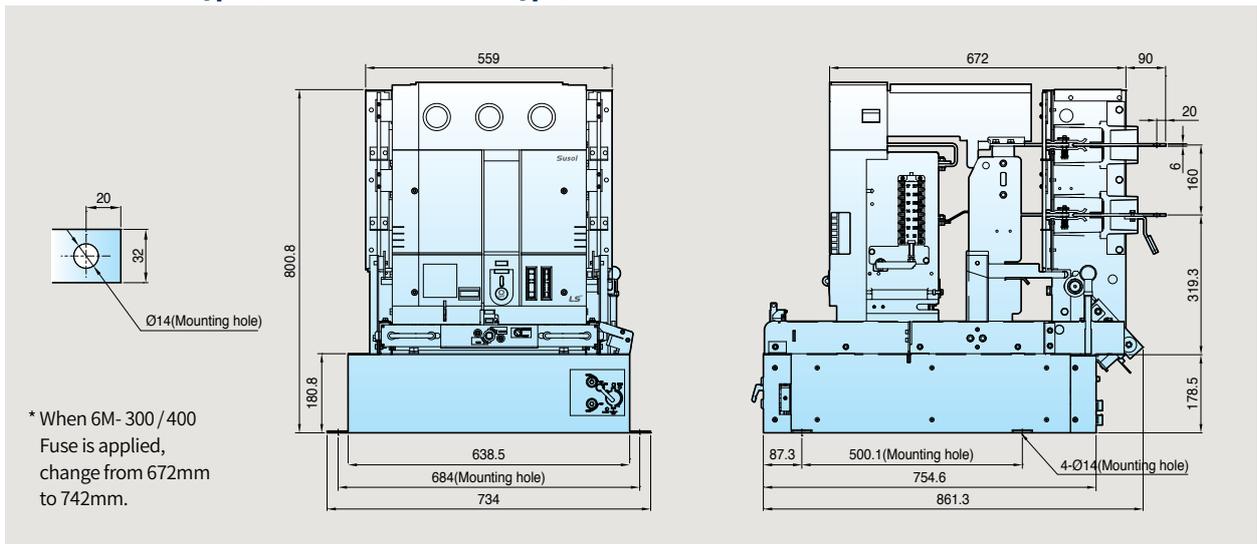
G-class cradle type (Combination lever type)

(Unit: mm)



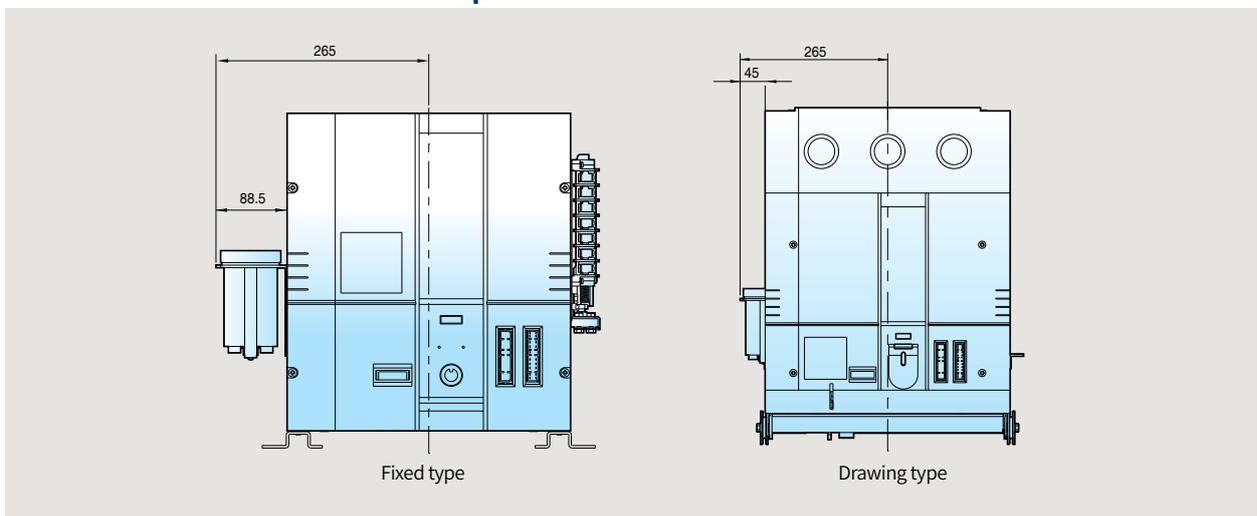
H-class cradle type (Combination screw type)

(Unit: mm)



CTD Dimension when attached with option

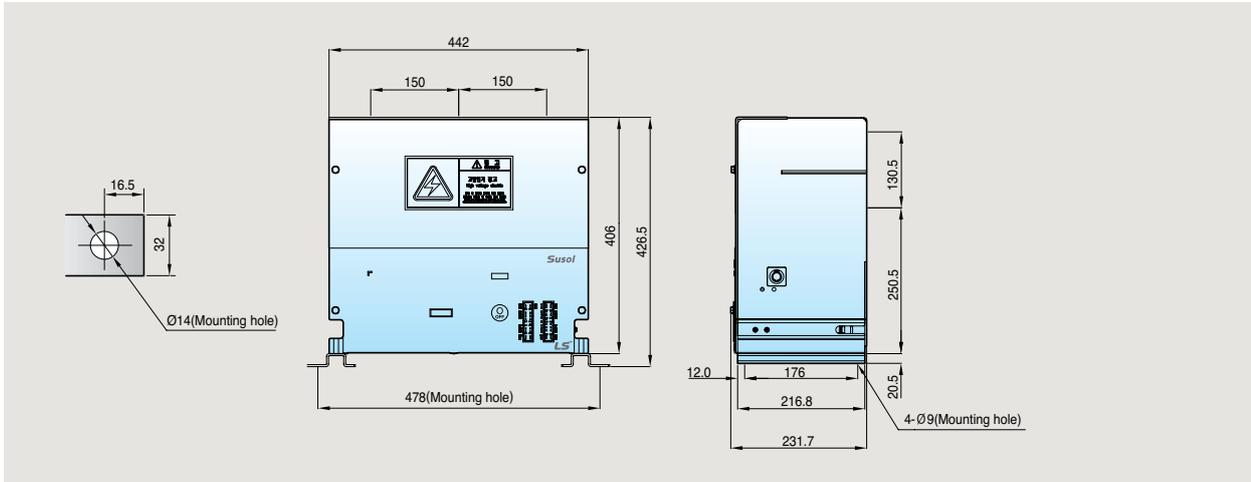
(Unit: mm)



Susol Vacuum Contactor
12kV body-dimensions

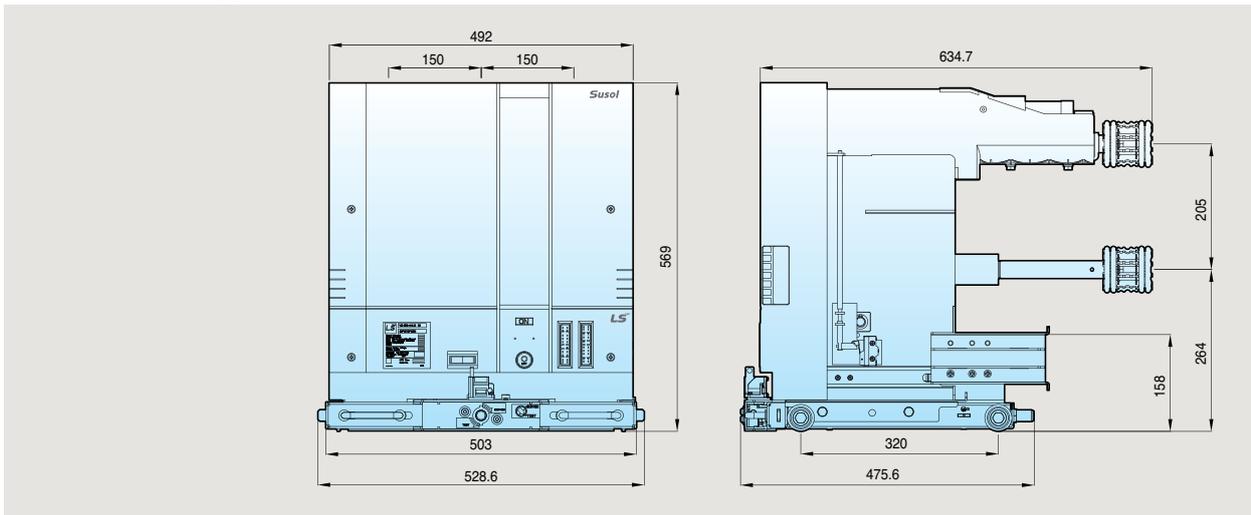
Fixed type

(Unit: mm)



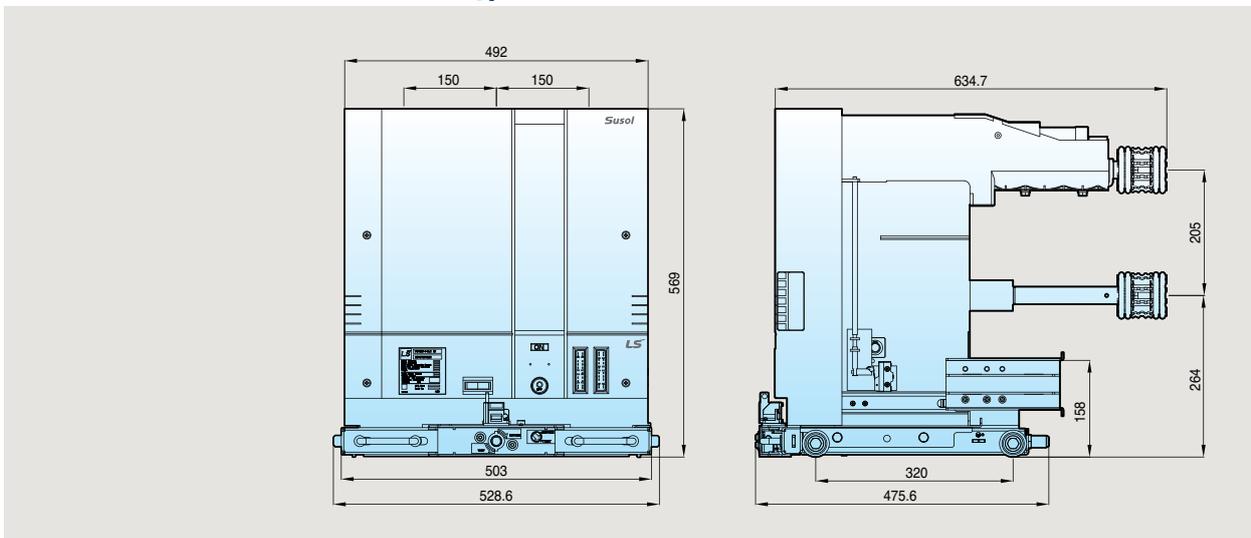
Non-fuse screw type

(Unit: mm)



Fuse-combined (Combination) screw type

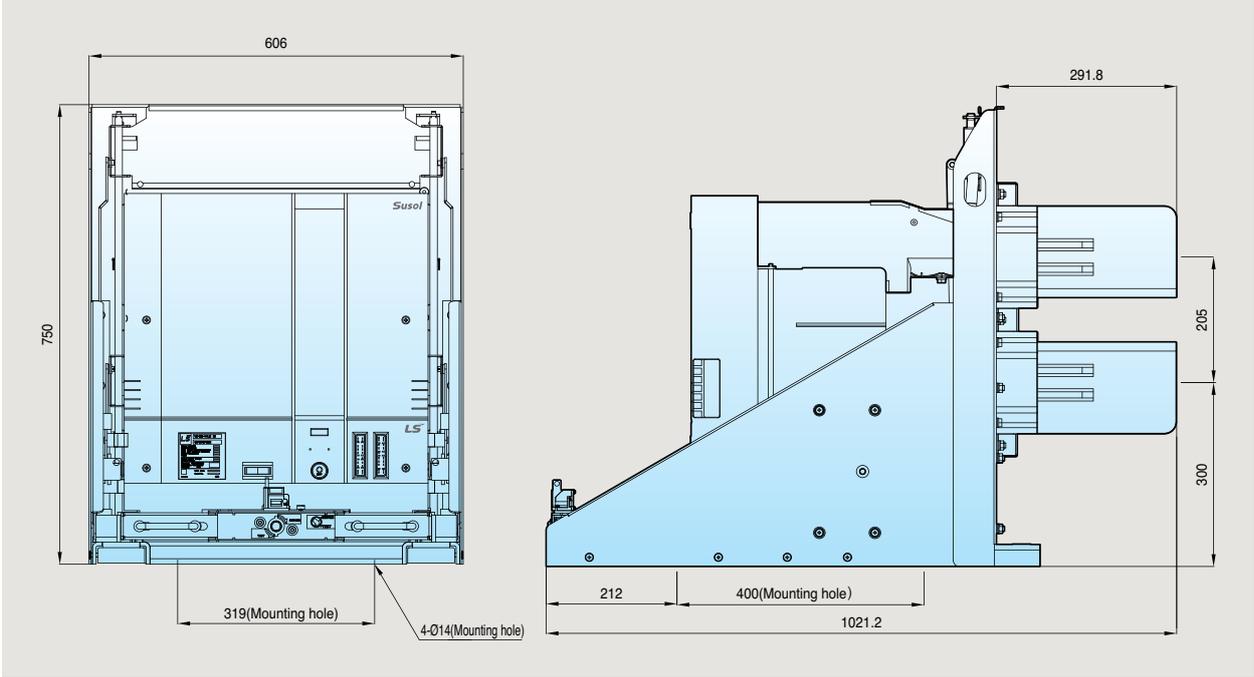
(Unit: mm)



12kV cradle-dimensions

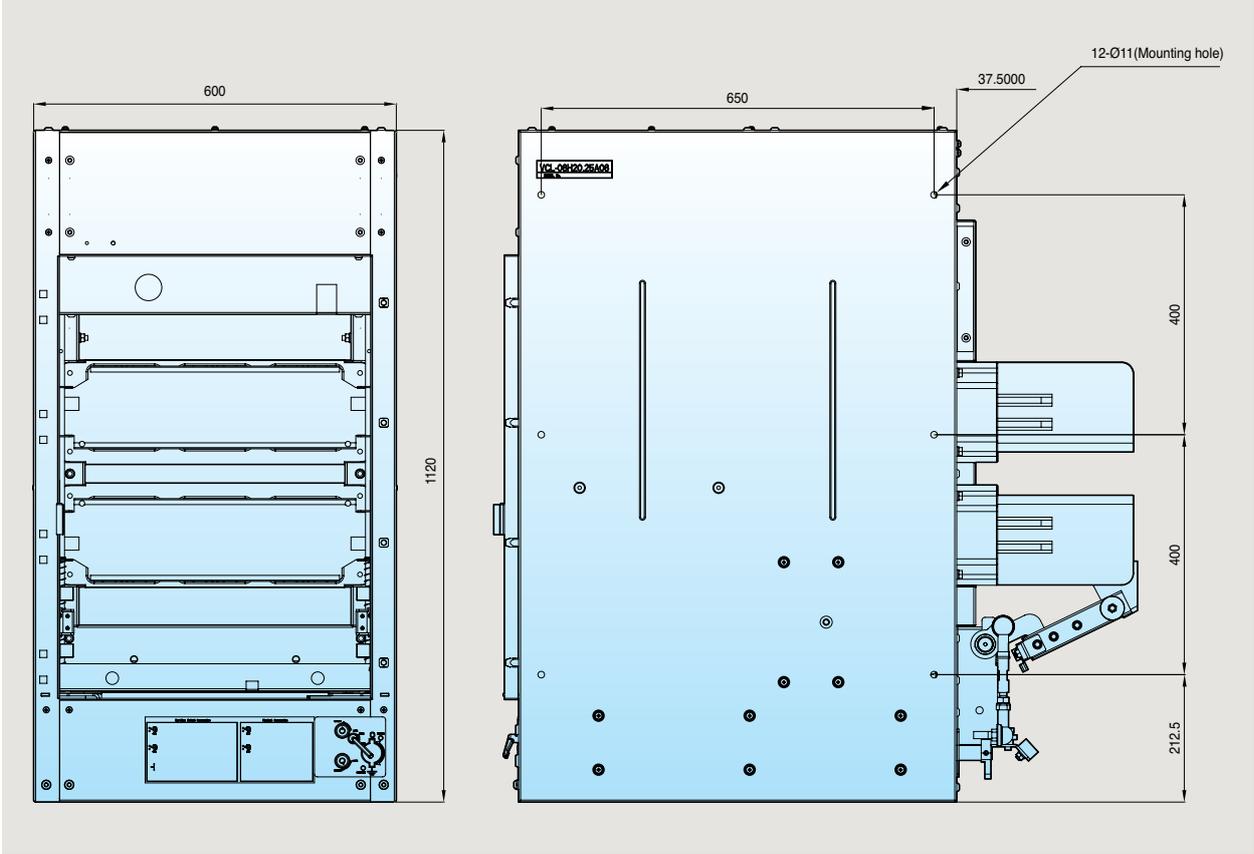
M-class cradle type (Combination screw type)

[Unit: mm]



H-class cradle type

[Unit: mm]



Rated current calibration based on the ambient temperature

When the ambient temperature exceeds the normal setting temperature, the equation below may be used to estimate the applicable current value.

$$I_a = I_r(\Theta_{max} - \Theta_a) / \Theta_r)^{1/2}$$

I_a : Allowable, constant transport current at the actual ambient temperature θ_a

I_r : Rated current at the ambient temperature 40°C

Θ_{max} : Total temperature at the available hottest spot

Θ_a : Ambient temperature expected at -30°C and 60°C

Θ_r : Allowable temperature at the hottest spot from rated current

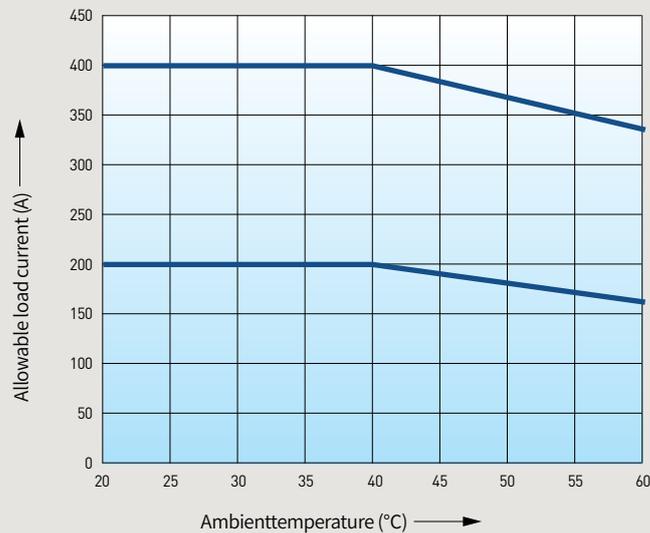
Ex) Estimating the load current that may be applied at the contactor (Rated current: 400A)'s ambient temperature 55°C

$$I_a = 400 \times ((105 - 55) / 65)^{1/2} = 400 \times 0.87 = 351A$$

Applicable load current according to changes in the ambient temperature

| Rated current (A) | Ambient temperature (°C) | | | | | | | | | |
|-------------------|--------------------------|-----|-----|-----|-----|-----|-----|-----|-----|--|
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | |
| 400 | 400 | 400 | 400 | 400 | 400 | 384 | 368 | 351 | 333 | |
| 200 | 200 | 200 | 200 | 200 | 200 | 192 | 184 | 175 | 166 | |

Applicable load current according to changes in the ambient temperature



Current limiting power fuse (PF)

LS current limiting PF is used to protect circuits and electric power systems from fault current. It is used to protect condenser circuits, motor circuits, transformers and cables.

* LS Current limiting PF applied for 3.6 / 7.2kV models is KS-certified.

Precautions for use

- PF should be used for short-circuit protection.
- PF cannot be re-closed after it operates.
- Establish an appropriate level of rated current so that transient current does not operate or degrade the PF.
- The PF operating characteristics are fixed, so the most suitable PF should be chosen considering its use and circuit characteristics.
- Protection coordination with other devices should be established for protection at the minimum breaking current or below.
- All phases should be replaced when fused.

Selection by power fuse usage

1. PF for transformer

- Select PF with the appropriate level of rated current considering the PF deterioration caused by the transformer's allowable overload.
- Make sure that the transformer's magnetizing inrush current-time is within the PF's permissible time-current characteristics. Rated current of PF for transformer \geq Transformer's rated current
- For collective protection of two or more transformers:
- After setting the maximum rated current for each phase, PF with the maximum rated current is applied to all 3 phases.
- Secondary short-circuit of transformer PF's minimum breaking current < Current at the primary short-circuit
- PF for potential transformer (PT)
- PF for PT is selected to prevent transformer breakdown, or for the primary short-circuit protection without considering the secondary short-circuit protection.
- Make sure that the operating characteristic of PF is below the over-current characteristic of protected devices and circuits.
- Make sure that it is smaller than the electromagnetic force based on PF's current limit and the short-circuit strength of circuits or devices based on operation 12t.

2. PF for motor

- Select PF with an appropriate level of rated current considering the PF deterioration caused by the motor's starting current.
- Make sure that the starting current-time characteristic is within the PF's permissible time-current characteristics. (Rated current of PF for motor \geq Motor's full load current)
- The intersection point of the PF's permissible time-current characteristic and contactor's operating characteristic should be above the minimum breaking current of PF, and the intersection point of the PF's operating characteristic and contactor's minimum operating (contact parting) characteristic should be below the rated breaking current of contactor.
- Check protection coordination of PF-contactor.ad.

3. PF for condenser

- Select PF with an appropriate rating considering the PF deterioration caused by the condenser's allowable overload.
- Make sure that the condenser's inrush current-time is within the PF's permissible time-current characteristic. Rated current of PF for condenser \geq Condenser's rated current.
- When there is a shunt capacitor, the PF that is capable of enduring the inrush current from the capacitor upon closing should be chosen.

KS certificate



Power fuse for transformer



Power fuse for motor



Susol Vacuum Contactor

List of current limiting PFs

Selection criteria & precautions for use

Selection criteria on transformer protection

1. Inrush current that is 10 times the rating may be applied for 0.1 sec.
2. Current that is 1.5 times the transformer's rating may be continuously applied. Here, the *list shows current that is 1.3 times.
3. Breaking of the current that is 25 times of the transformer's rated current is possible within 2 seconds.

Selection criteria on motor protection

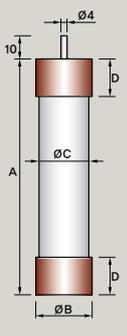
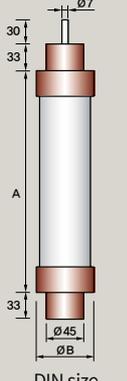
1. Starting current that is 5 times the rated current may be applied for 10 seconds.
2. A separate relay is needed for short-circuit protection in coordination with VC.

Selection criteria on condenser protection

1. Inrush current that is 71 times the rating may be applied for 0.002 sec.
2. Current that is 1.43 times the condenser's rating may be continuously applied.
3. A list of M-type PFs is applied when repeated breaking-making is 1,000 times or more.

※ (): The value in the parenthesis is for the 7.2kV model.

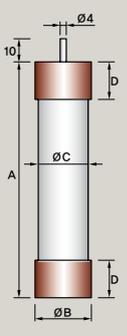
The conditions described above are based on the KS standard, and may change according to load conditions.

| G-type PF | Applied | Rated voltage (kV) | Rated current (A) | Rated breaking current (kA) | Minimum breaking current (A) | |
|--|---------------------|-----------------------|----------------------|--------------------------------|---------------------------------|--|
| | Model name | | | | | |
|  <p>KS size</p> | LFL - 3 / 6G - 5 | 3.6 (7.2) | 5 | 40 | 5In | |
| | LFL - 3 / 6G - 10 | | 10 | | | |
| | LFL - 3 / 6G - 20 | | 20 | | | |
| | LFL - 3 / 6G - 30 | | 30 | | | |
| | LFL - 3 / 6G - 40 | | 40 | | | |
| | LFL - 3 / 6G - 50 | | 50 | | | |
| | LFL - 3 / 6G - 60 | | 63 | | | |
| | LFL - 3 / 6G - 75 | 75 | 40 | 5In | | |
| | LFL - 3 / 6G - 100 | 100 | | | | |
| | LFL - 3G - 150 | 150 | | | | |
| | LFL - 3G - 200 | 200 | 3.6 | 40 | 5In | |
| | LFL - 3G - 300 | 300 | | | | |
| | LFL - 3G - 400 | 400 | | | | |
| | LFL - 6G - 150 | 150 | 7.2 | 40 | 5In | |
| | LFL - 6G - 200 | 200 | | | | |
| | LFL - 6G - 300 | 300 | | | | |
| LFL - 6G - 400 | 400 | | | | | |
|  <p>DIN size</p> | LFL - 3 / 6G - 5B | 3.6 (7.2) | 5 | 40 | 4In | |
| | LFL - 3 / 6G - 10B | | 10 | | | |
| | LFL - 3 / 6G - 20B | | 20 | | | |
| | LFL - 3 / 6G - 30B | | 30 | | | |
| | LFL - 3 / 6G - 40B | | 40 | | | |
| | LFL - 3 / 6G - 50B | | 50 | | | |
| | LFL - 3 / 6G - 60B | | 63 | | | |
| | LFL - 3 / 6G - 75B | 75 | 40 | 4In | | |
| | LFL - 3 / 6G - 100B | 100 | | | | |
| | LFL - 3 / 6G - 125B | 125 | | | | |
| | LFL - 3G - 160B | 160 | 3.6 | 40 | 4In | |
| | LFL - 3G - 200B | 200 | | | | |
| | LFL - 6G - 160B | 160 | | | | |
| | LFL - 6G - 200B | 200 | 7.2 | 200 | | |

※ ()The number in the parenthesis is for the 7.2kV model.

G-type PFs may be applied for motor load, but M-type PFs are recommended for use.



| M-type PF | Applied | Rated voltage (kV) | Rated current (A) | Rated breaking current (kA) | Minimum breaking current (A) | |
|--|----------------|-----------------------|----------------------|--------------------------------|---------------------------------|--|
| | Model name | | | | | |
|  <p>KS size</p> | LFL - 3M - 20 | 3.6 | 20 | 40 | 7In | |
| | LFL - 3M - 50 | | 50 | | | |
| | LFL - 3M - 100 | | 100 | | | |
| | LFL - 3M - 150 | | 150 | | | |
| | LFL - 3M - 200 | | 200 | | | |
| | LFL - 3M - 300 | | 300 | | | |
| | LFL - 3M - 400 | | 400 | | | |
| | LFL - 6M - 20 | 20 | 7.2 | 40 | 7In | |
| | LFL - 6M - 50 | 50 | | | | |
| | LFL - 6M - 100 | 100 | | | | |
| | LFL - 6M - 150 | 150 | | | | |
| | LFL - 6M - 200 | 200 | | | | |
| | LFL - 6M - 300 | 300 | | | | |
| | LFL - 6M - 400 | 400 | | | | |

| | Transformer load (kVA) | | Condenser load (kVA) | Dimensions (mm) | | | | Applied holder |
|--|-----------------------------|-----------------------------|------------------------------|-----------------|-----|-----|----|----------------|
| | Single-phase | Three-phase | Three-phase | A | B | C | D | |
| | - ※(5or under) | 15or under ※(15or under) | - ※(-) | 261 | 50 | 47 | 25 | LFH-6G-D60 |
| | 10or under (15or under) | 15or under (30or under) | 10or under (25or under) | | | | | |
| | 20or under (50or under) | 30or under (75or under) | 30or under (50or under) | | | | | |
| | 30or under (75or under) | 75or under (150or under) | 50or under (100or under) | | | | | |
| | 50or under (100or under) | 100or under (200or under) | 75or under (150or under) | | | | | |
| | 75or under (150or under) | 150or under (300or under) | 100or under (200or under) | | | | | |
| | - (-) | - (-) | - (-) | | | | | |
| | 150or under (200or under) | 200or under (400or under) | 200or under (400or under) | 311 | 60 | 57 | 30 | LFH-6G-D1H |
| | 200or under (400or under) | 375or under (750or under) | 300or under (600or under) | | | | | |
| | 300or under (-) | 500or under (-) | 400or under (-) | | | | | |
| | 400or under (-) | 750or under (-) | 600or under (-) | | | | | |
| | 625or under (-) | 1,000or under (-) | 1,000or under (-) | 311 | 77 | 73 | 43 | LFH-6G-D2H |
| | 750or under (-) | 1,500or under (-) | - (-) | | | | | |
| | - (500or under) | - (1,000or under) | - (800or under) | | | | | |
| | - (750or under) | - (1,500or under) | - (1,200or under) | | | | | |
| | - (1,250or under) | - (2,000or under) | - (-) | 350 | 110 | 108 | 55 | LFH-6G-D4H |
| | - (-) | - (2,500or under) | - (-) | | | | | |
| | 4 ~ 8 ※(8 ~ 16) | 6.7 ~ 14 ※(13 ~ 28) | 9.8or under ※(9.8or under) | 195 | 55 | - | - | LFH-6G-D1HB |
| | 6 ~ 13(13 ~ 25) | 11 ~ 22(21 ~ 44) | 9.8 ~ 12(19 ~ 24) | | | | | |
| | 15 ~ 31(30 ~ 62) | 25 ~ 53(51 ~ 107) | 12 ~ 31(24 ~ 61) | | | | | |
| | 21 ~ 42(40 ~ 84) | 35 ~ 73(70 ~ 145) | 31 ~ 46(61 ~ 92) | | | | | |
| | 40 ~ 82(80 ~ 165) | 69 ~ 143(137 ~ 286) | 46 ~ 64(92 ~ 128) | | | | | |
| | 49 ~ 102(98 ~ 204) | 85 ~ 117(170 ~ 354) | 64 ~ 81(128 ~ 163) | | | | | |
| | 66 ~ 137(132 ~ 275) | 114 ~ 238(229 ~ 476) | 181 ~ 105(163 ~ 210) | | | | | |
| | 68 ~ 165(134 ~ 330) | 117 ~ 285(233 ~ 571) | 105 ~ 150(210 ~ 300) | 192 | 77 | - | - | LFH-6G-D1HB |
| | 128 ~ 220(256 ~ 440) | 222 ~ 381(443 ~ 762) | 150 ~ 222(300 ~ 445) | | | | | |
| | 151 ~ 275(302 ~ 550) | 261 ~ 476(522 ~ 952) | 222 ~ 275(445 ~ 550) | 292 | 77 | - | - | LFH-6G-D2HB |
| | 211 ~ 352(-) | 365 ~ 610(-) | 275 ~ 370(-) | | | | | |
| | 265 ~ 440(-) | 495 ~ 762(-) | 370 ~ 550(-) | | | | | |
| | - (425 ~ 704) | - (735 ~ 1,220) | - (550 ~ 742) | | | | | |
| | - (437 ~ 880) | - *(755 ~ 1,520) | - (742 ~ 1,000) | | | | | |

| | Motor load(kW) | Condenser load (kVA) | Dimensions (mm) | | | | Applied holder |
|--|----------------|----------------------|-----------------|----|----|----|----------------|
| | Three-phase | Three-phase | A | B | C | D | |
| | 37 ~ 75 | 50or under | 200 | 60 | 58 | 30 | LFH-3M-100 |
| | 90 ~ 200 | 150or under | | | | | |
| | 220 ~ 400 | 300or under | | | | | |
| | 450 ~ 630 | 400or under | 200 | 77 | 73 | 43 | LFH-3M-200 |
| | 710 ~ 800 | 800or under | | | | | |
| | 900 ~ 1,250 | 1,000or under | 250 | 87 | 84 | 50 | LFH-3M-400 |
| | 1,500 | - | | | | | |
| | 75 ~ 160 | 100or under | 311 | 60 | 58 | 30 | LFH-6M-50 |
| | 185 ~ 400 | 300or under | | | | | |
| | 450 ~ 800 | 600or under | 350 | 77 | 73 | 43 | LFH-6M-200 |
| | 900 ~ 1,250 | 800or under | | | | | |
| | 1,500 | - | 450 | 87 | 84 | 50 | LFH-6M-400 |
| | 2,500 | - | | | | | |
| | 3,000 | - | | | | | |

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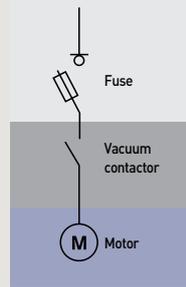
Protection coordination

Current-time relation of PF for motor protection

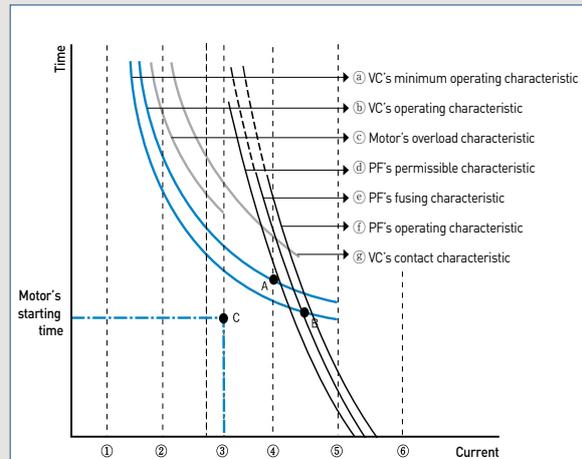
- Motor's full load current (①) \leq PF's rated current (②)
- The operating characteristic of VC (⑥) should be under (on the left) the motor's load characteristic (③).
- The 'A' point should be on the right side of the PF's minimum breaking current (④) and the 'B' point should be on the left side of the VC's rated breaking current (⑤).

Note)

The current range larger than the 'B' point is protected by PF.



- ① Motor's full load current
- ② PF's rated current
- ③ Motor's starting current
- ④ PF's minimum breaking current
- ⑤ VC's rated breaking current
- ⑥ Short-circuit current



- A: Intersection point of the VC's operating characteristic and PF's permissible characteristics
 B: Intersection point of the VC's minimum operating characteristic and PF's operating characteristics (transfer current)
 C: Motor's starting current-time characteristics

Current-time relation of the PF for transformer protection

When the secondary protective devices are not taken into consideration

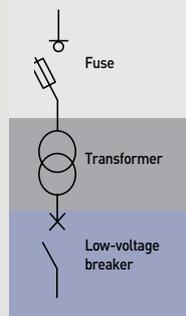
- The transformer's allowable overload current (③) should be on the left side of the PF's permissible time-current characteristic (⑥); the transformer's full load current (①) \leq PF's rated current (④)
- The 'C' point should be on the left side of the PF's permissible time-current characteristic.
- Secondary short-circuit current (⑩) $>$ PF's minimum breaking current (⑥)

When a breaker is used for the secondary short-circuit protection

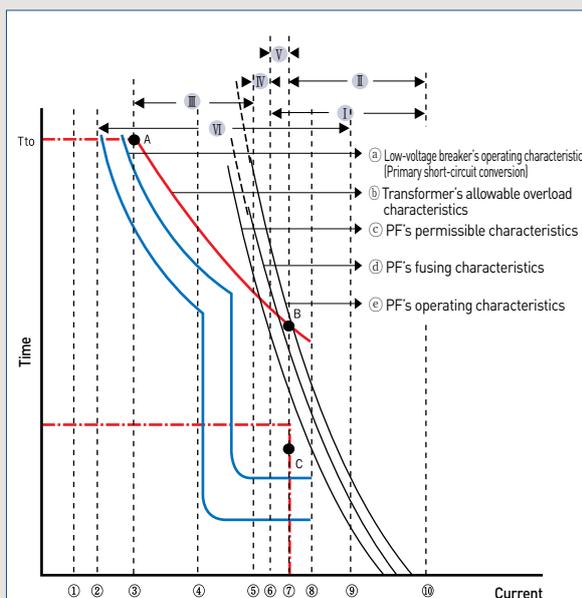
- It should satisfy the conditions specified in clause 1
- The operating characteristics of a breaker for the secondary short-circuit protection (⑨) should be on the left side (Under) of the transformer's allowable overload current characteristic (⑤) at the current that is smaller than the 'B' point.
- The operating characteristic of a low-voltage breaker (⑧) should be on the left side (Under) of the PF's permissible time-current characteristic (⑥) at the current that is smaller than the secondary short-circuit current (⑩).

※ Protecting relationship in a drawing

- I range: PF protects the power system from short circuits.
- II range: PF protects the transformer.
- III range: PF does not operate.
- IV range: Fusing occurs, but breaking is not guaranteed.
- V range: Breaking is guaranteed, but the transformer is not protected.
- III+IV+V: Transformer is not protected. (Backup measure: A breaker is used for coordination of the secondary short-circuit protection.



- ① Transformer's full load current
- ② Low-voltage breaker's minimum breaking current
- ③ Transformer's allowable overload current
- ④ PF's rated current
- ⑤ PF's minimum fusing current
- ⑥ PF's minimum breaking current
- ⑦ Transformer's no-load magnetizing inrush current
- ⑧ Secondary short-circuit current
- ⑨ Low-voltage breaker's rated breaking current
- ⑩ Primary short-circuit current

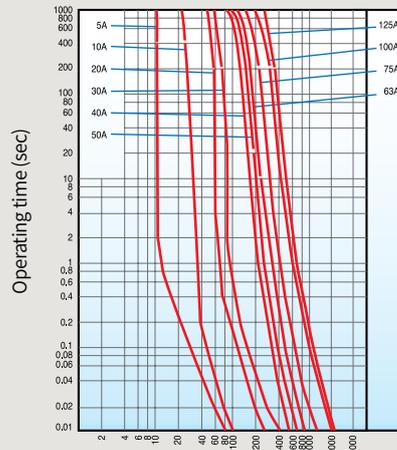


- A: Transformer's allowable overload current
 B: Intersection point of the transformer's allowable overload current characteristic and PF's operating characteristic
 C: Transformer's no-load magnetizing inrush current, continuous time

Characteristic curve

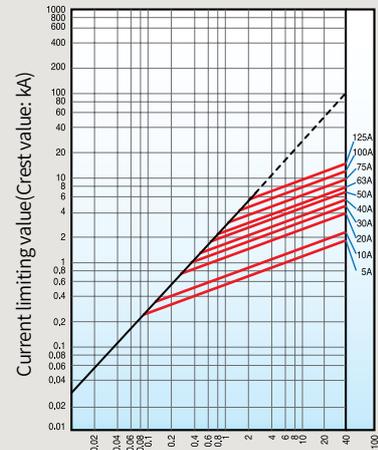
Din type

3.6/7.2kV Current characteristic



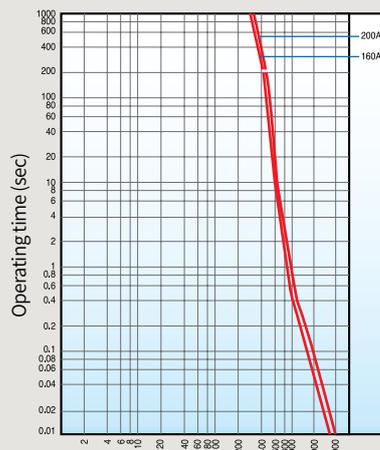
Conventional current (Effective value: A)

3.6/7.2kV Current limiting characteristics



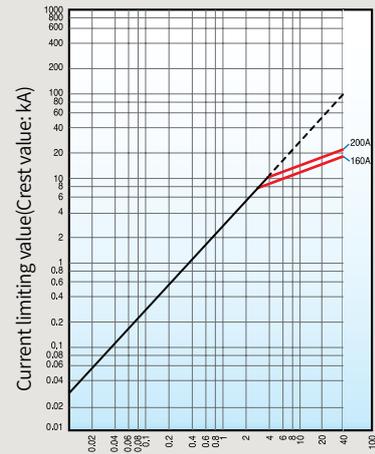
Conventional current (Effective value: kA)

3.6kV Current characteristic



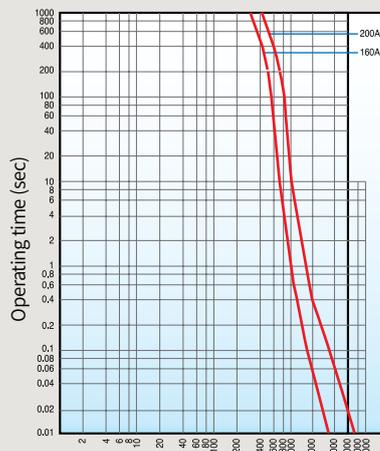
Conventional current (Effective value: A)

3.6kV Current limiting characteristics



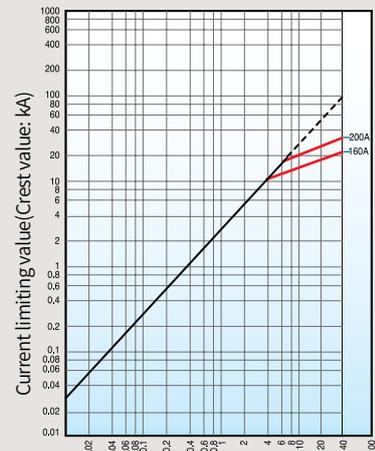
Conventional current (Effective value: kA)

7.2kV Current characteristic



Conventional current (Effective value: A)

7.2kV Current limiting characteristics



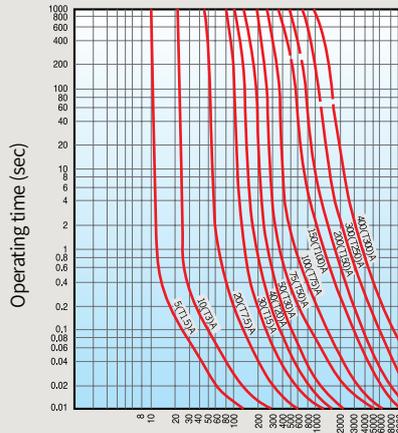
Conventional current (Effective value: kA)

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Characteristic curve

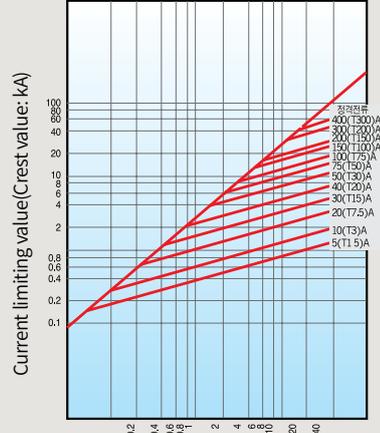
KS type

3.6/7.2kV Current characteristic G-type fuse (Standard type)



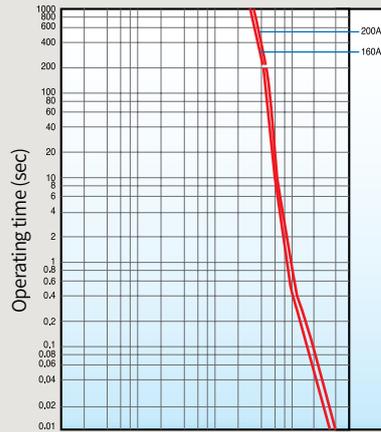
Conventional current (Effective value: A)

3.6/7.2kV Current limiting characteristic G-type fuse (Standard type)



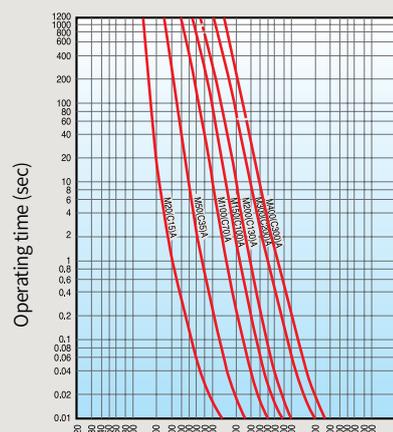
Conventional current (Effective value: kA)

3.6kV Current characteristic M-type fuse (For motor protection)



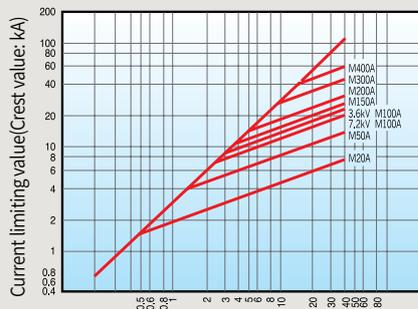
Conventional current (Effective value: A)

7.2kV Current characteristic M-type fuse (For motor protection)



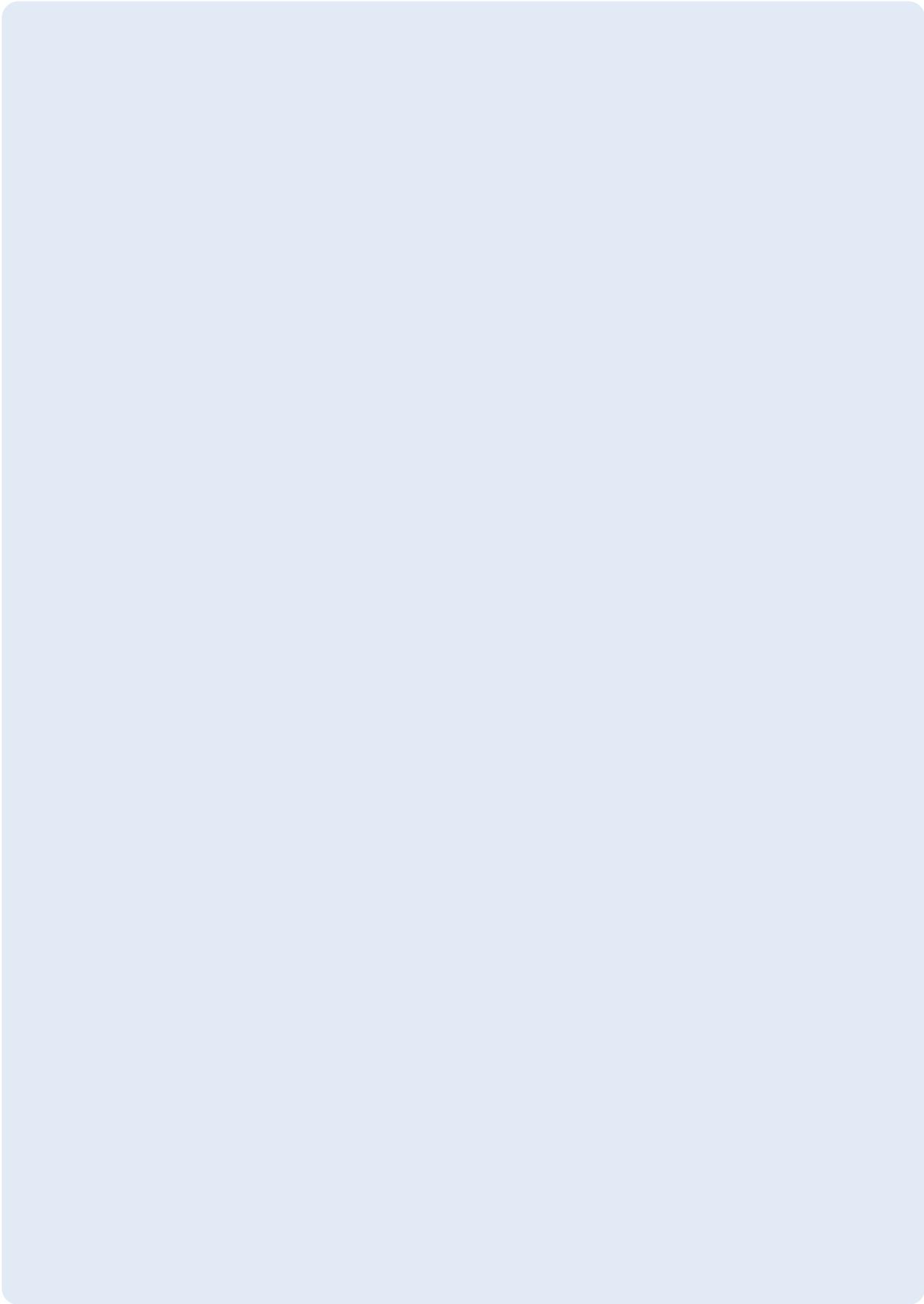
Conventional current (Effective value: A)

7.2kV Current limiting characteristic M-type fuse (For motor protection)



Conventional current (Effective value: kA)

Memo



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LS is engaged in business all over the world. LS global network includes 7 overseas corporations, 12 overseas branches, and 224 clients in 77 countries.



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Focuses on gaining competitive advantages through development of next generation platforms



Power device R&D center

Leading technology in electric industry and continuously developing future-growth dynamic engines



Automation R&D center

Serves as the main research institute for LS



PT&T (Testing laboratory)

Internationally-renowned testing center that has formed partnerships with the UL, CE, KEMA and CESI



Cheongju factory (Korea)

Electric products, mold TR, MV / LV switchgear, HV GIS

Factory



Cheonan factory (Korea)
PLC, AC drive, HMI, DCS, PV module



Busan factory (Korea)
HV TR, HVDC, FACTS



Wuxi factory (China)
Electric products



Dalian factory (China)
MV / LV switchgear, MV contactor



Hanoi factory (Vietnam)
MV / LV switchgear, Mold TR



Safety Instructions

- For your safety, please read user's manual thoroughly before operating.
- Contact the nearest authorized service facility for examination, repair, or adjustment.
- Please contact qualified service technician when you need maintenance. Do not disassemble or repair by yourself!
- Any maintenance and inspection shall be performed by the personnel having expertise concerned.



- According to The WEEE Directive, please do not discard the device with your household waste.



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