NOARK ASD25DC

PV/BPS Air switch disconnectors from 800A to 2500A are certified to

UL 489/UL 489B

User Manual

Contents

Installation manual

Danger and warning

This device should be installed, operated, serviced and maintained only by professional personnel.

Noark Electric is not responsible for any consequences caused by non-compliance with this the manual.

- ★ After unpacking the product, check for any damage and the integrity of other items.
- ★ Do not install the product in inflammable, explosive, humid and condensing environment.
- ★ Do not install the product at places where gas medium can cause metal corrosion and insulation damage.
- ★ Connect the product to the proper power supply and standard wires.
- ★ Leave sufficient space and safe distance around the product.
- ★ Do not touch the conductive parts during operation.
- ★ Disconnect all the power sources during installation and maintenance.
- ★ Failure to follow the above instructions may result in equipment damage, personal injury or even death.

Environmental protection

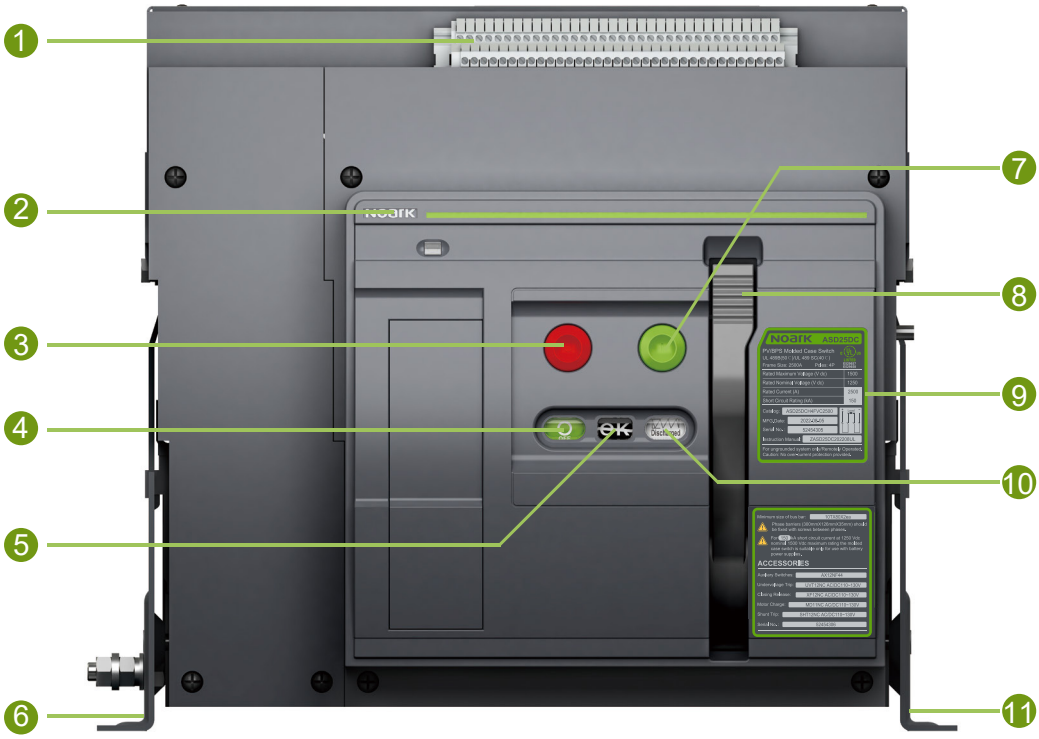
To protect environment, this product and its components should be disposed properly as industrial waste upon end of life; or delivered to recycling plant who will dismantle and recycle the product according to relevant national regulations.

Codes and Standards

UL 489、CSA C22.2 NO.5
UL file number: E529658

UL 489B、CSA C22.2 NO.305
UL file number: E529657

Overview



1. Control circuit wiring terminal
2. Brand
3. Opening push-button (O)
4. Contact position indicator
   - a) opening
   - b) closing

5. Closing ready indicator
   - a) ready
   - b) not ready

6. Fixed plate (left)
7. Closing push-button (I)
8. Manual spring charge handle
9. Nameplate
10. Spring charged/discharged indicator
    - a) Spring charged
    - b) Spring discharged

11. Fixed plate (right)

Product parameters

Type			ASD25DC
Pole			4P
Installation			Fixed
Rated current(A)			800A/1000A/1250A/1600A/2000A/2500A
Rated Maximum Valatge(V)			DC1500
Short circuit withstand current (kA,50ms)			120/150
Operating time(ms)	Max.openning time		≤30
	Max.closing time		≤70
Life cycles(time)	Mechanical		12500
	Electrical		2000
External dimensions Inches(mm) H×W×D		800A-2000A	15.43X18.31X17.01 (392X465X433)
		2500A	15.43X18.31X17.95 (392X465X456)
Enclosure dimensions Inches(mm) H×W×D			21.73×23.62×13.86 (552×600×352) Ventilation Area Top: 18183mm²

Environmental Conditions

Ambient temperature

ASD25DC air switch disconnector can operate in -40℃ ~ 70℃ environmental conditions.

ASD25DC air switch disconnector can operate at higher temperatures than the reference temperature 40℃,in this case,the derating coefficients shown in the table must be applied.

Rated Current(A)	Temperature(℃)													
	Horizontial type							Vertical type						
	<40	45	50	55	60	65	70	<40	45	50	55	60	65	70
800	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1600	100%	100%	100%	100%	100%	95%	90%	100%	100%	100%	100%	100%	100%	100%
2000	100%	100%	100%	100%	95%	90%	85%	100%	100%	100%	100%	100%	95%	93%
2500	100%	100%	100%	95%	90%	85%	80%	100%	100%	100%	100%	95%	93%	90%

Altitude

ASD25DC air switch disconnector do not undergo changes in rated performance up to 2000m.Beyond this altitude ,the derating coefficients shown in the table must be applied.

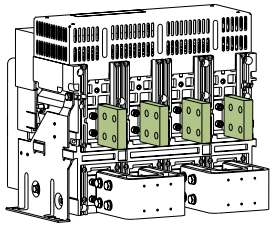
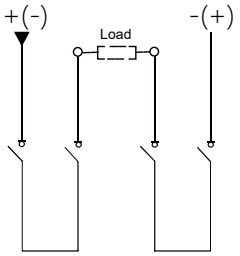
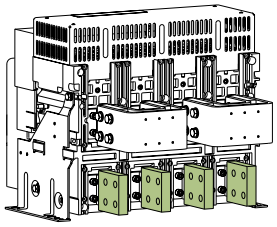
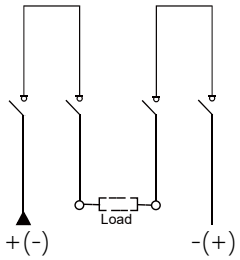
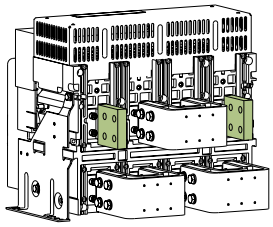
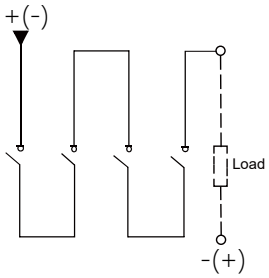
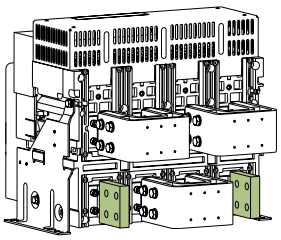
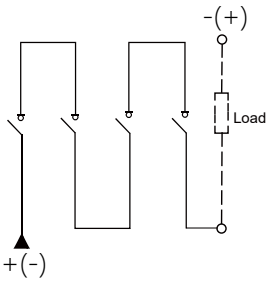
	Altitude(m)			
	<2000	3000	4000	5000
Rated Voltage(V)	1xUe	0.9xUe	0.8xUe	0.7xUe
Rated Current(A)	1xIn	0.98xIn	0.96xIn	0.94xIn

Humidity

The relative humidity does not exceed 85% at 40℃,the monthly average maximum of relative humidity in the wettest month does not exceed 90%.

The effect of surface condensation caused by temperature changes on product performance should be taken into consideration.

Connection type

TypeC			
Upper Supply		Lower supply	
			
TypeD			
			

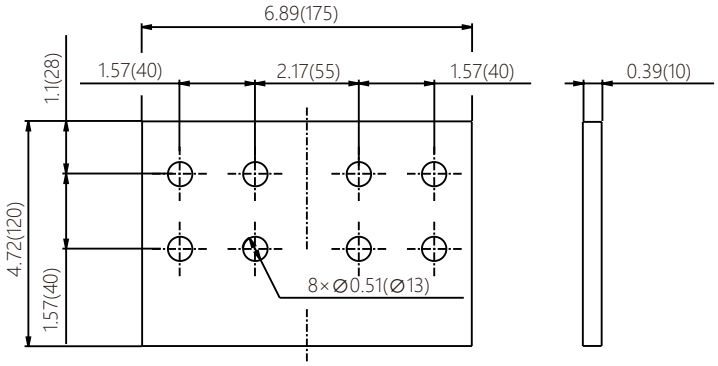
*Configuration C for ungrounded system only

*Configuration D for either grounded or ungrounded in PV system

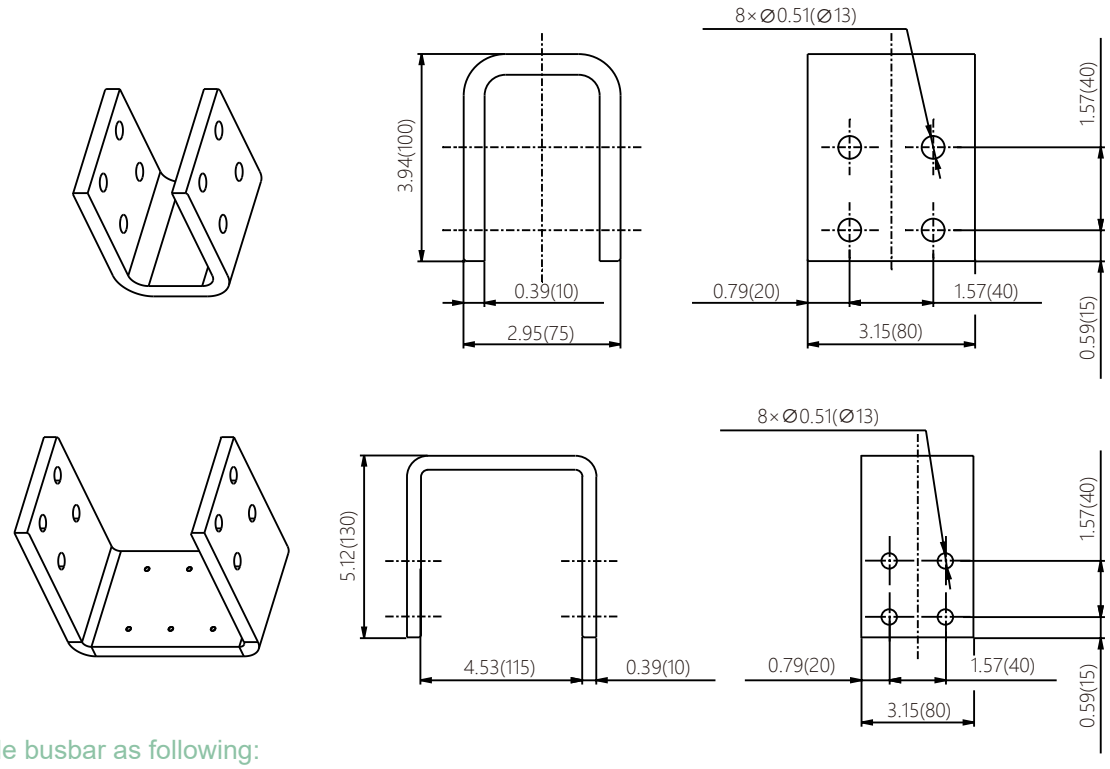
Connection type

Jumper busbars dimensions

800-2000A:



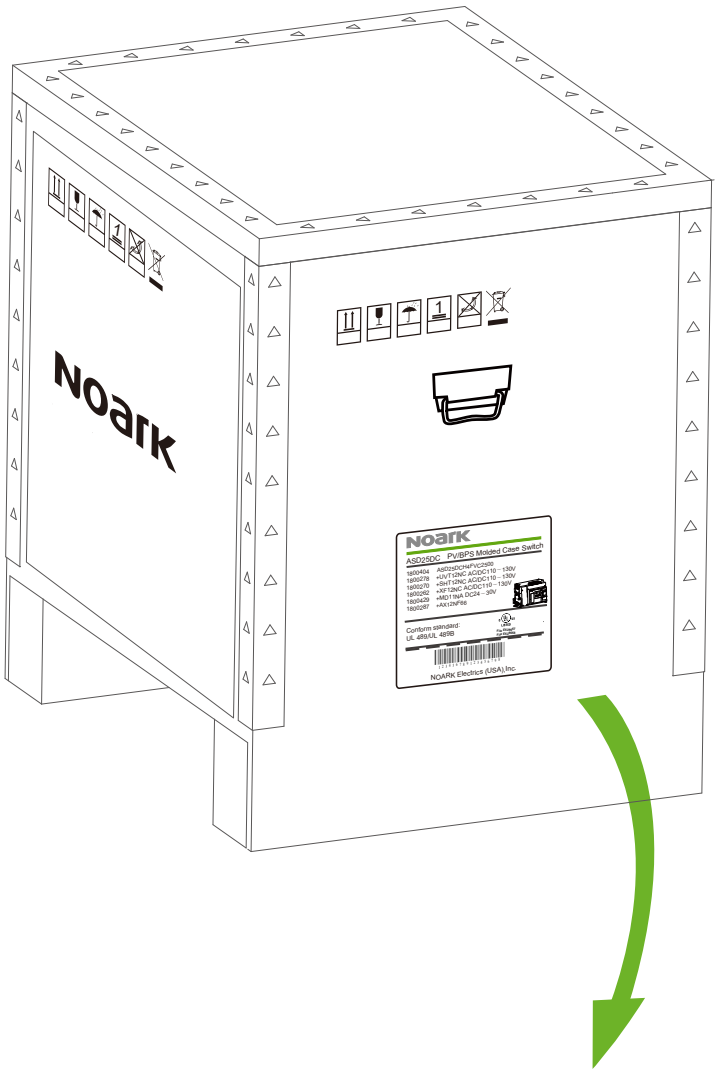
2500A:



Applicable busbar as following:

Rated Current	Horizontal type	Vertical type
800A	6.35TX76.2X1ea (inch:1/4X3X1ea)	6.35TX76.2X1ea (inch:1/4X3X1ea)
	10TX50X1ea	10TX50X1ea
1000A	6.35TX50.8X2ea (inch:1/4X2X2ea)	6.35TX50.8X2ea (inch:1/4X2X2ea)
	6TX50X2ea	6TX50X2ea
1200A	6.35TX57.2X2ea (inch:1/4X2 1/4X2ea)	6.35TX57.2X2ea (inch:1/4X2 1/4X2ea)
	8TX50X2ea	8TX50X2ea
1600A	6.35TX76.2X2ea (inch:1/4X3X2ea)	6.35TX76.2X2ea (inch:1/4X3X2ea)
	10TX50X2ea	10TX50X2ea
2000A	6.35TX101.6X2ea (inch:1/4X4X2ea)	6.35TX101.6X2ea (inch:1/4X4X2ea)
	10TX80X2ea	10TX80X2ea
2500A		6.35TX127X2ea (inch:1/4X5X2ea)
	10TX80X2ea	10TX80X2ea
	10TX100X2ea	10TX100X2ea

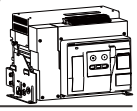
Package identification



Noark

ASD25DC PV/BPS Molded Case Switch

1800404	ASD25DCH4FVC2500
1800278	+UVT12NC AC/DC110～130V
1800270	+SHT12NC AC/DC110～130V
1800262	+XF12NC AC/DC110～130V
1800429	+MD11NA DC24～30V
1800287	+AX12NF66



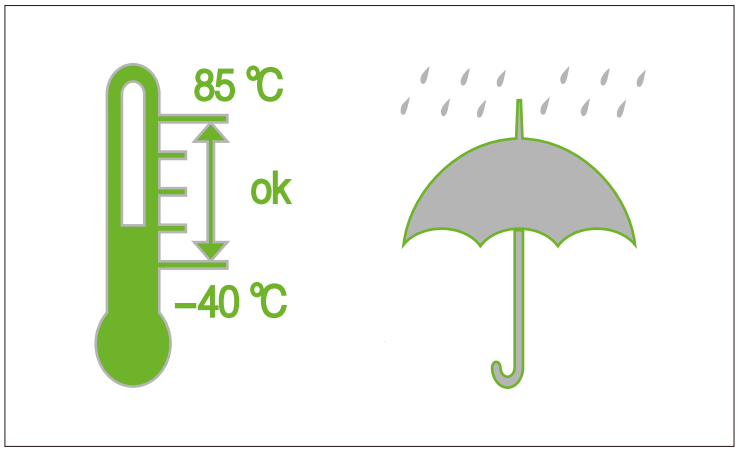
Conform standard:
UL 489/UL 489B

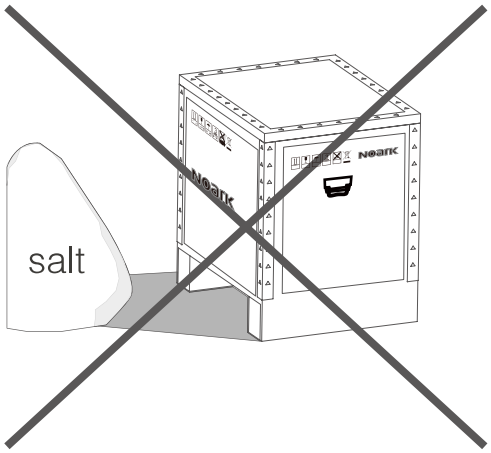
c UL us LISTED
File E529657
File E529658

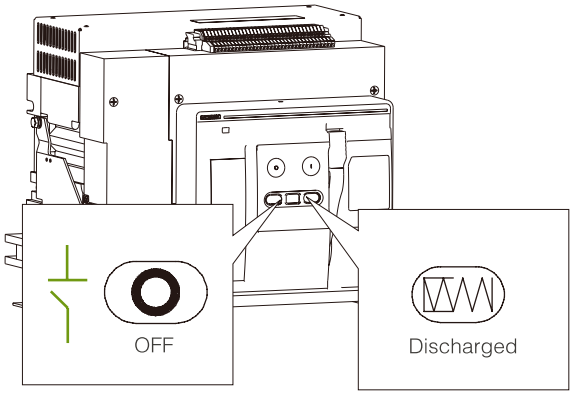
1 2 3 4 5 6 7 8 9 1 2 3 4 5 6 7 9 8

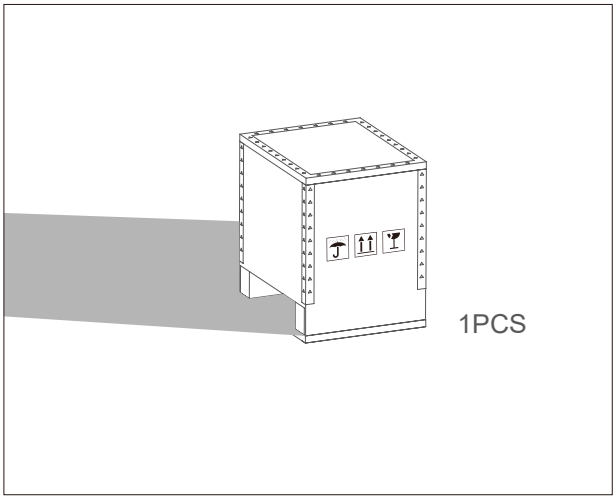
NOARK Electrics (USA),Inc.

Storage

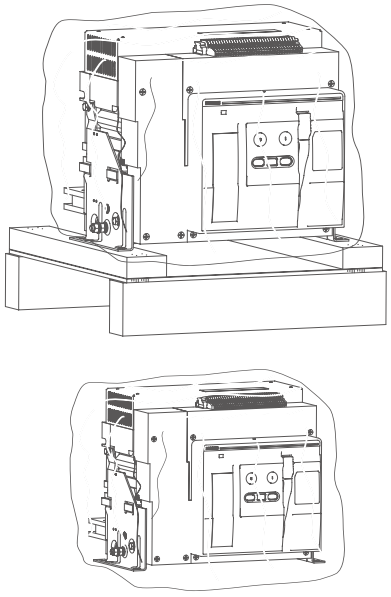


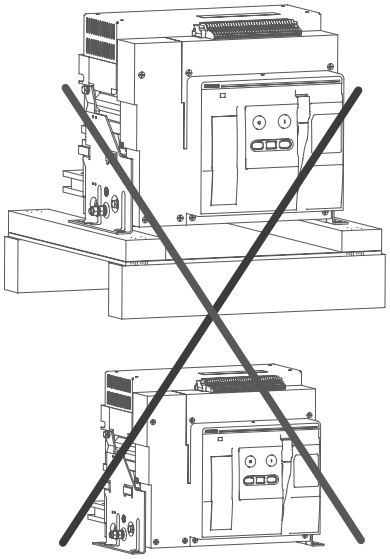






With Plastic Bag



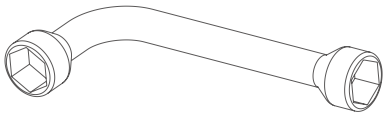


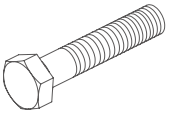
Necessary tools

Angled socket wrench,hex key,screwdriver

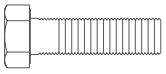
installation bolt：Hex Cap Screws：　1/2 in x 2 $\frac{1}{4}$ in

in/mm



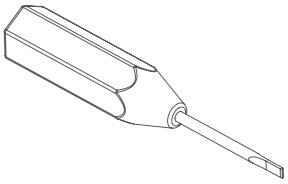


Installation Bolt



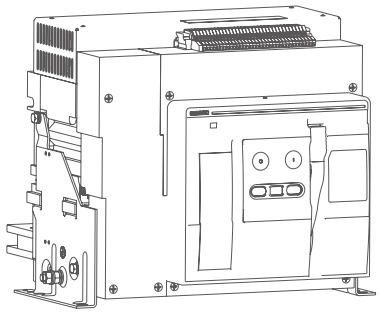
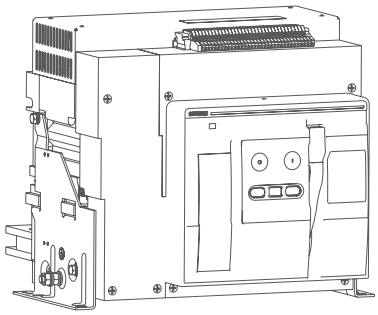
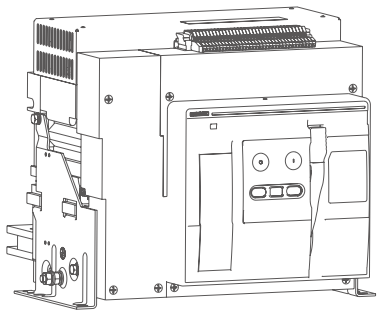
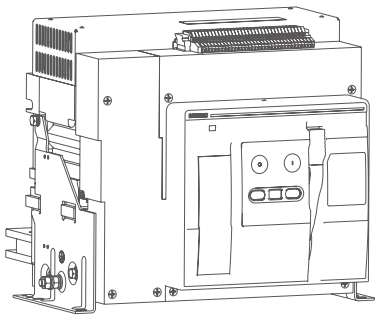
Hex Cap Screws : 1/2 in x 2 $\frac{1}{4}$ in

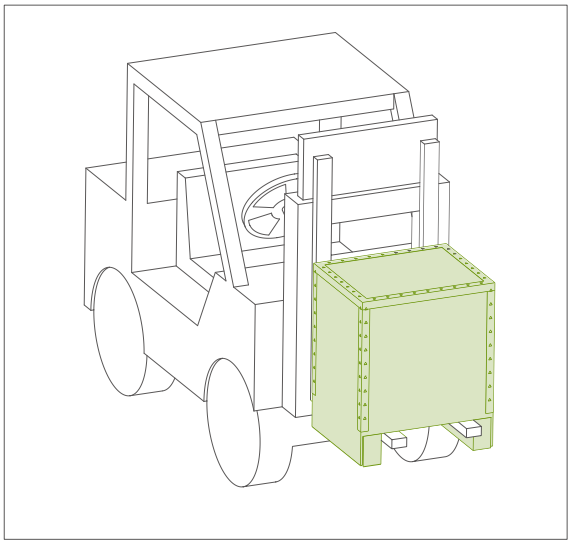
Application in Control Circuit Wiring



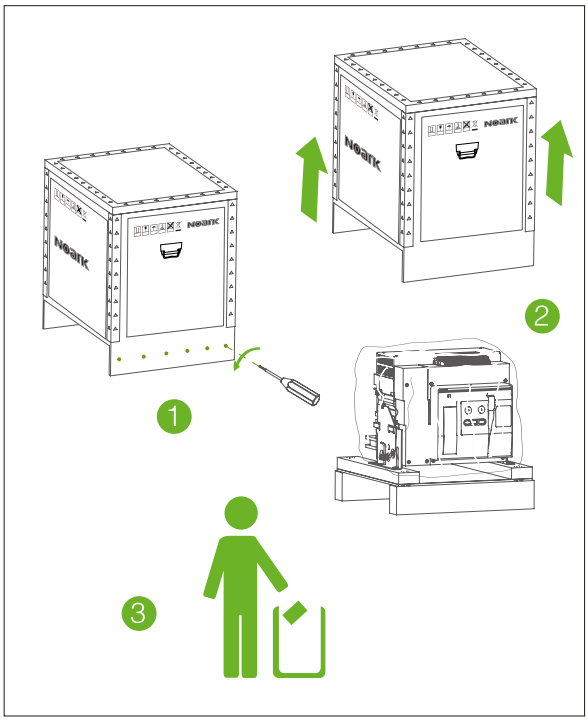
Handling

unit : lb/kg

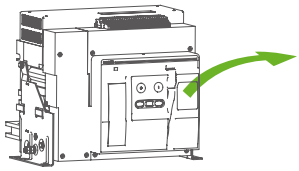
	800A/1000A/1250A/1600A/2000A		2500A	
Type C				
	net weight	154/70	net weight	154/70
	gross weight	198/90	gross weight	198/90
Type D				
	net weight	163/74	net weight	166/75.5
	gross weight	207/94	gross weight	210/95.5

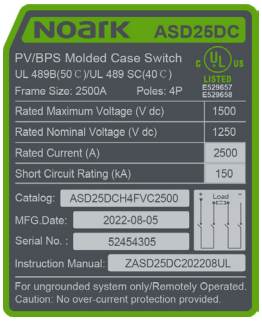


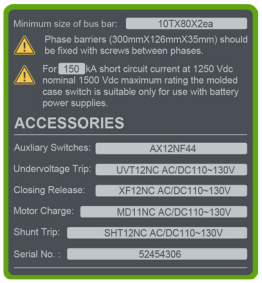
Unpacking



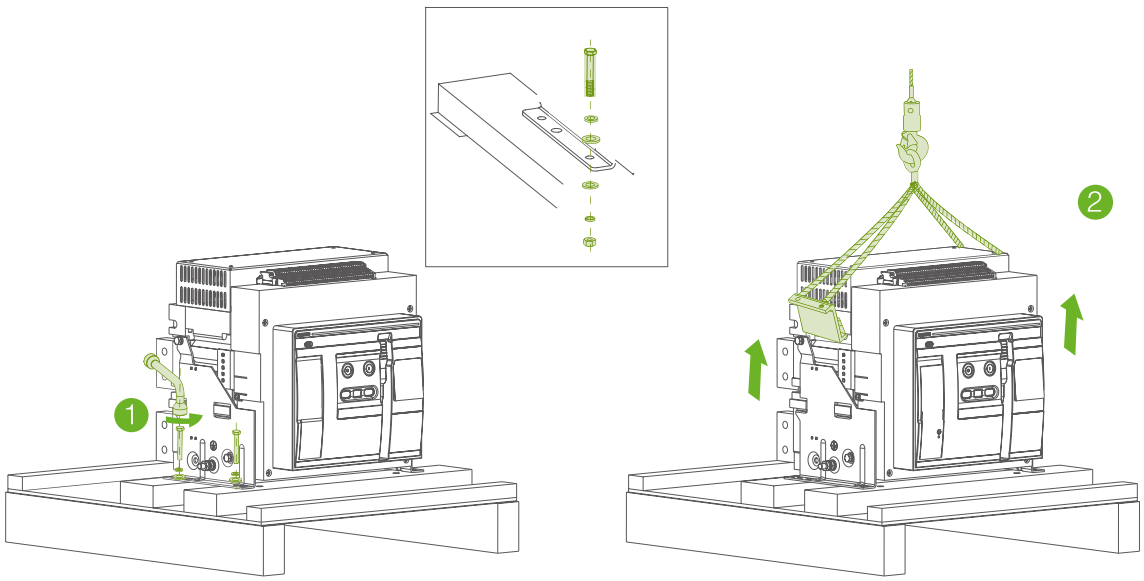
Nameplate example







Fixed



Installation Dimension

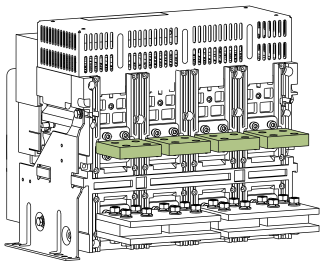
Type C

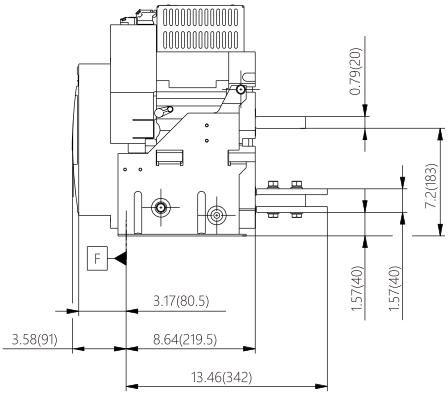
800A/1000A/1250A/1600A/2000A

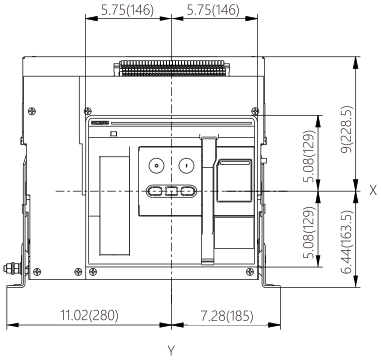
Horizontal installation

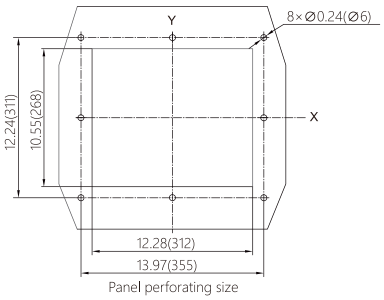
Upper supply

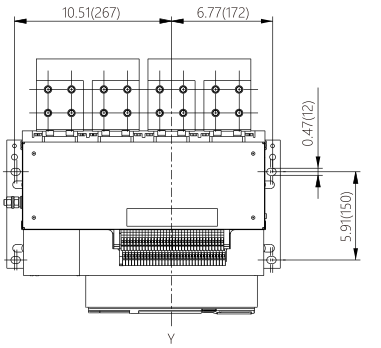
in(mm)

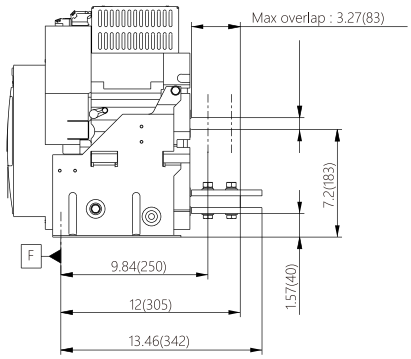


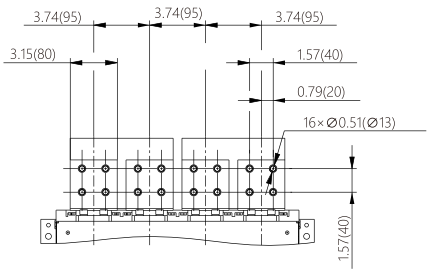












Installation Dimension

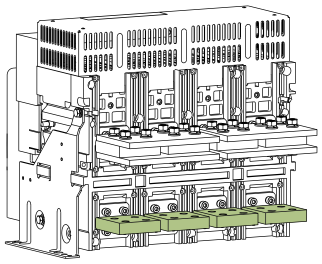
Type C

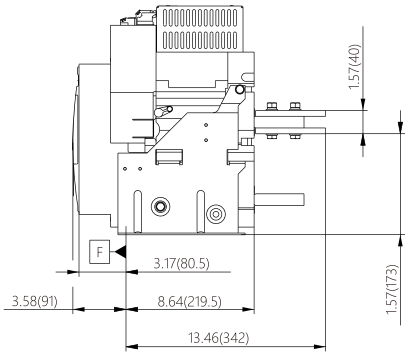
800A/1000A/1250A/1600A/2000A

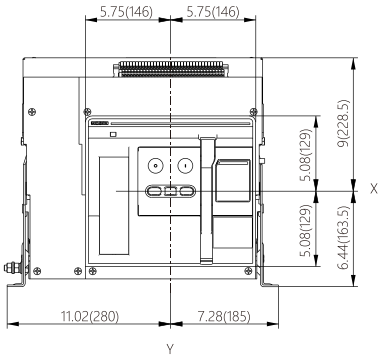
Horizontal installation

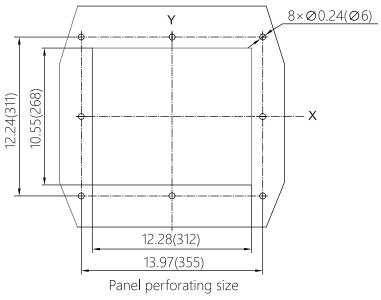
Lower supply

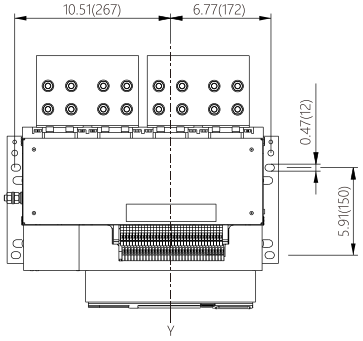
in(mm)

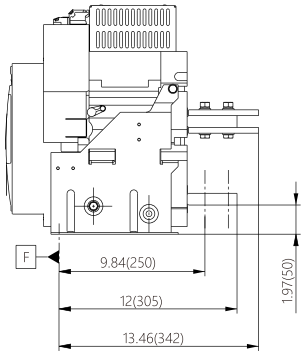


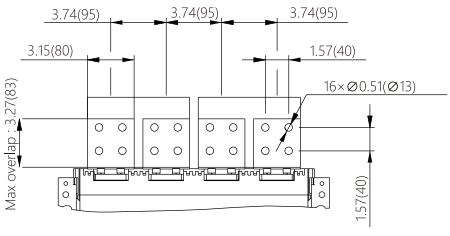












Installation Dimension

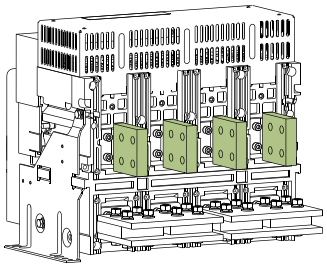
Type C

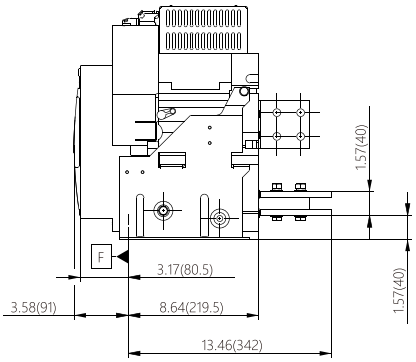
800A/1000A/1250A/1600A/2000A

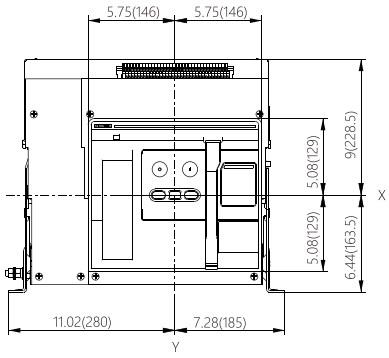
Vertical installation

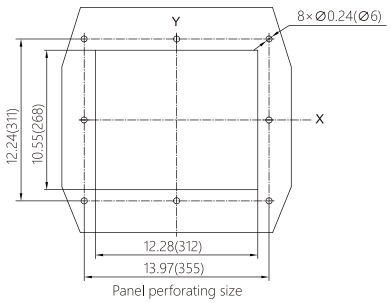
Upper supply

in(mm)

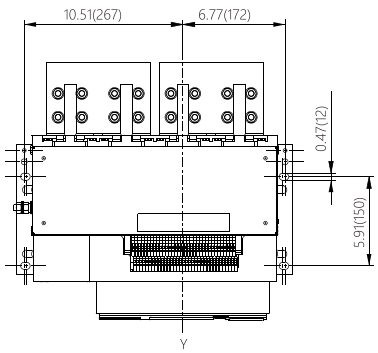


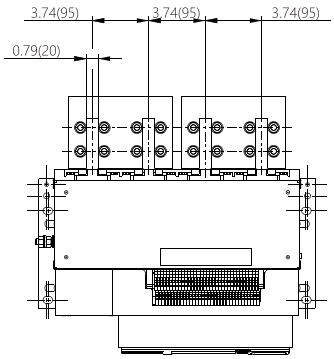


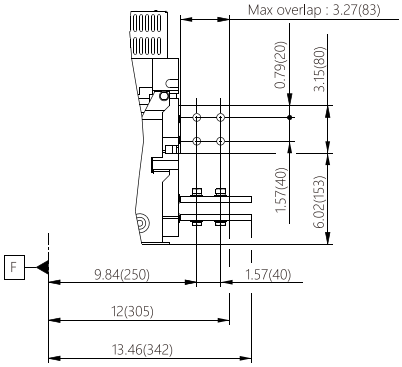




Panel perforating size







Installation Dimension

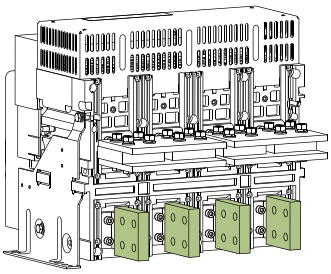
Type C

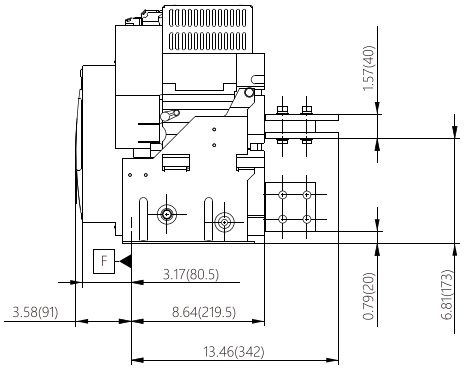
800A/1000A/1250A/1600A/2000A

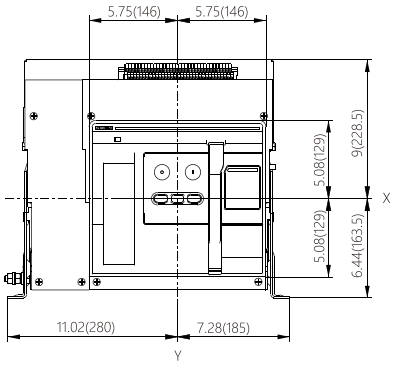
Vertical installation

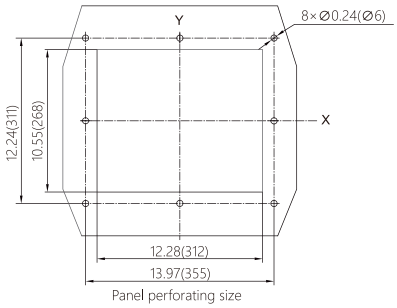
Lower supply

in(mm)

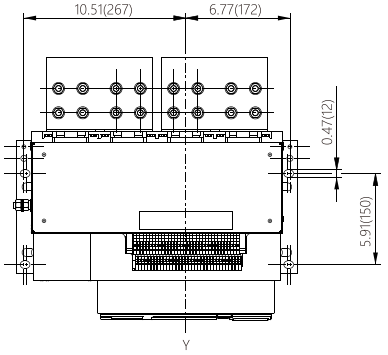


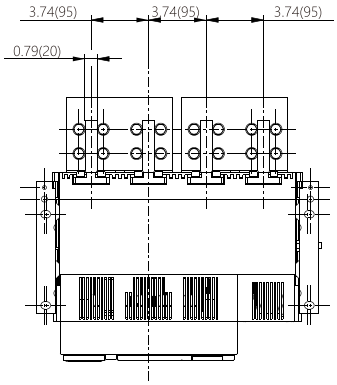


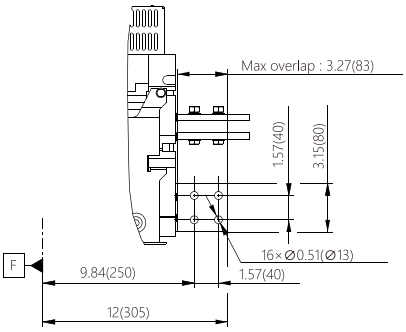




Panel perforating size







Installation Dimension

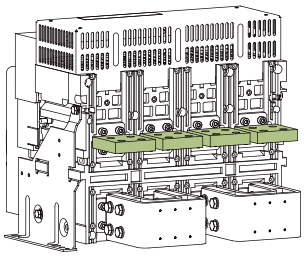
Type C

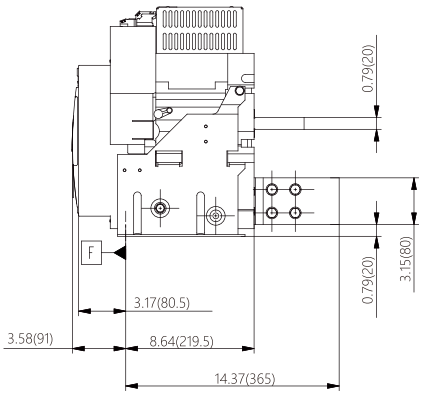
2500A

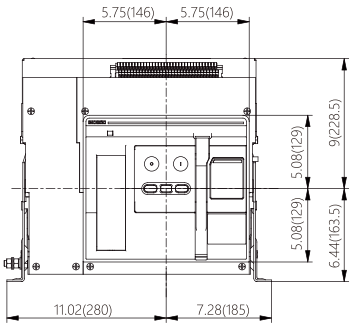
Horizontal installation

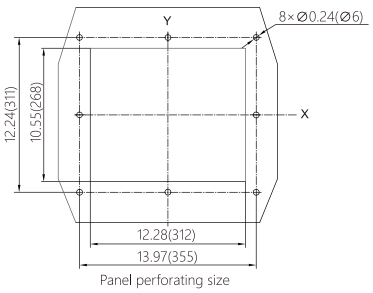
Upper supply

in(mm)

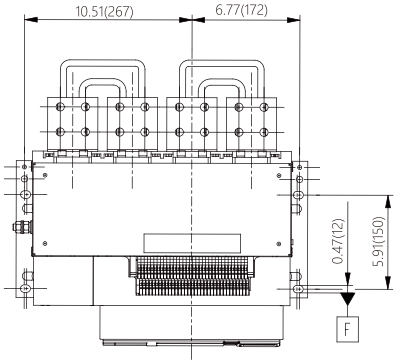


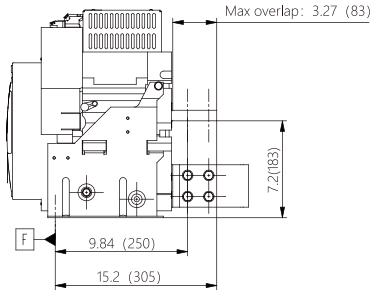


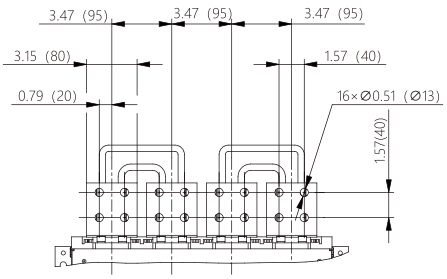




Panel perforating size







Installation Dimension

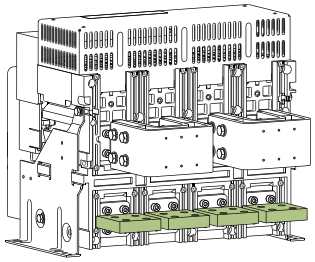
Type C

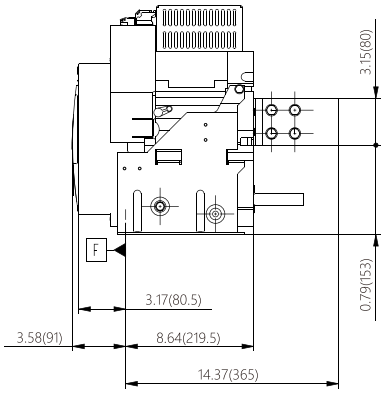
2500A

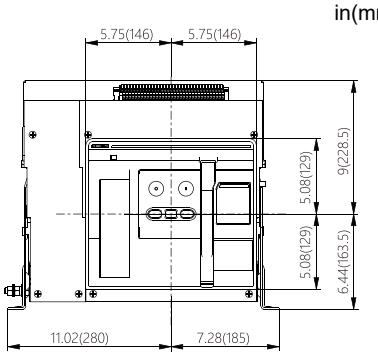
Horizontal installation

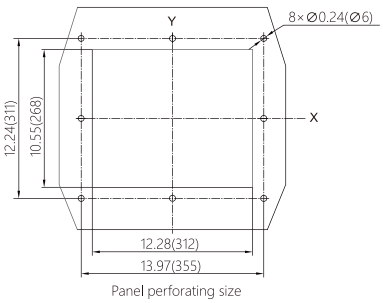
Lower supply

in(mm)

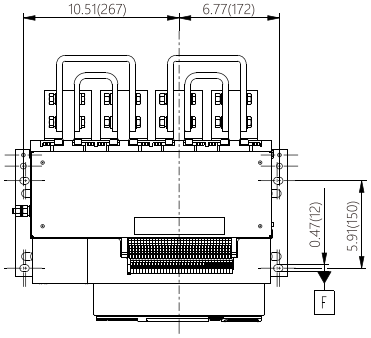


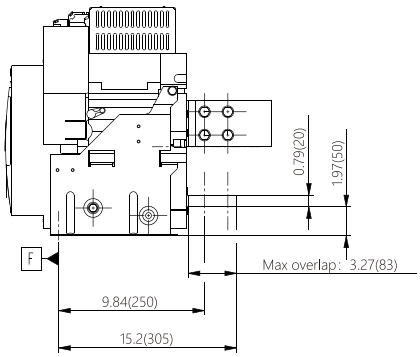


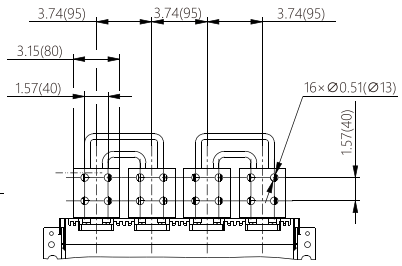




Panel perforating size







Installation Dimension

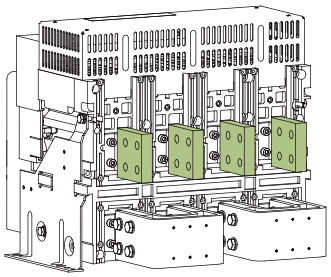
Type C

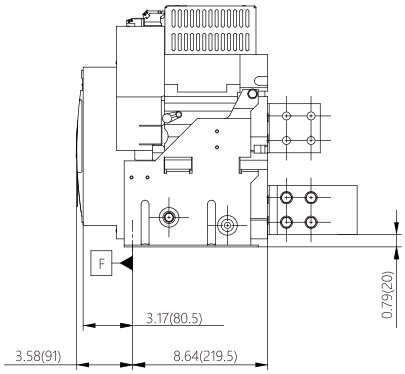
2500A

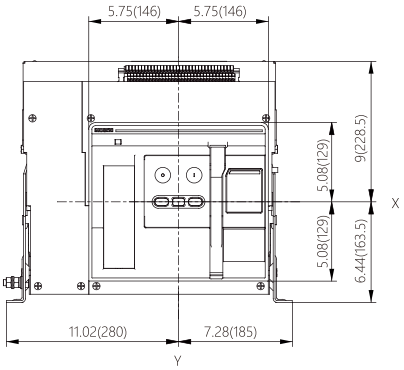
Vertical installation

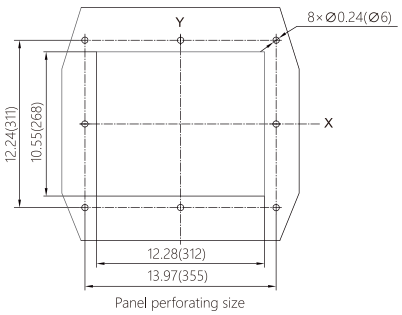
Upper supply

in(mm)

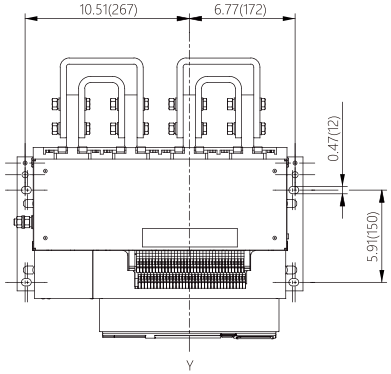


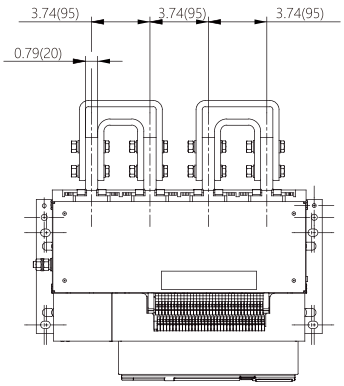


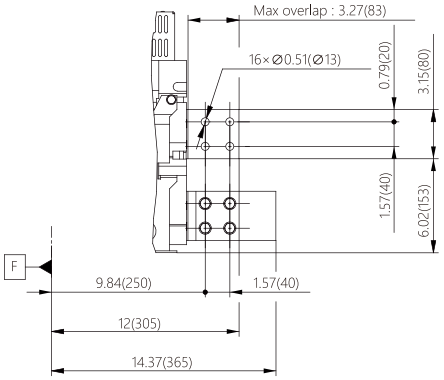




Panel perforating size







Installation Dimension

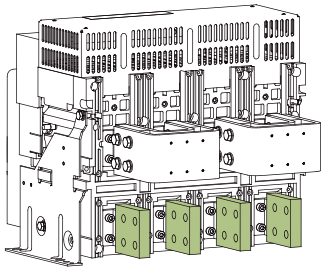
Type C

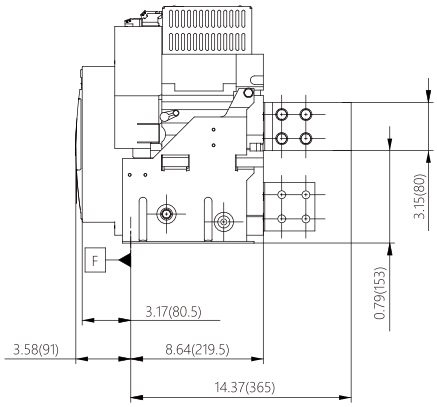
2500A

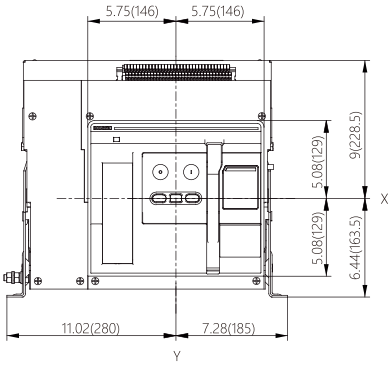
Vertical installation

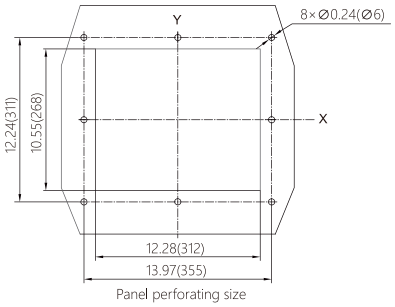
Lower supply

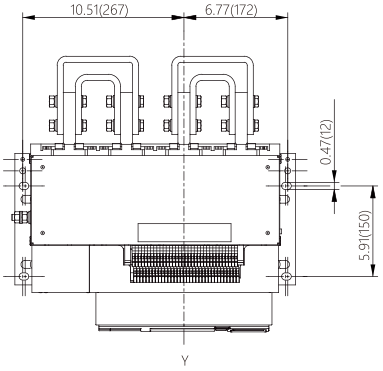
in(mm)

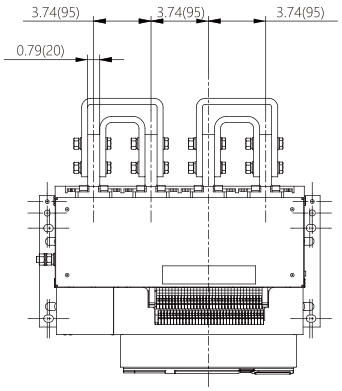


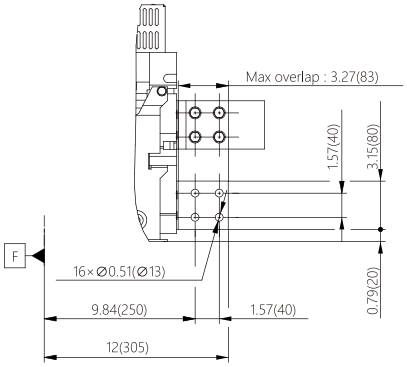












Installation Dimension

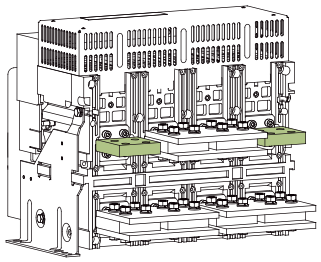
Type D

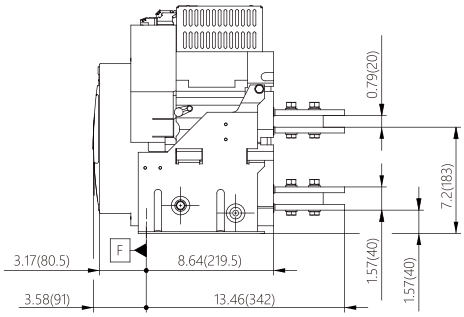
800A/1000A/1250A/1600A/2000A

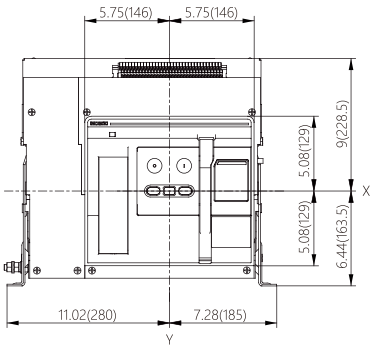
Horizontal installation

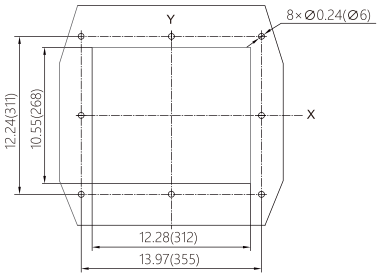
Upper supply

in(mm)

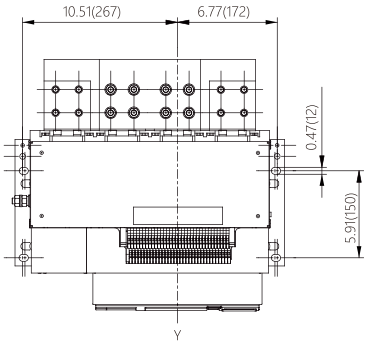


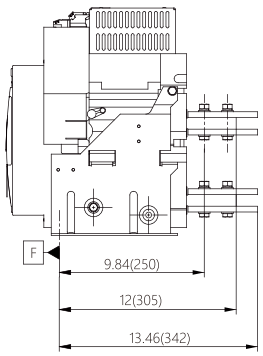


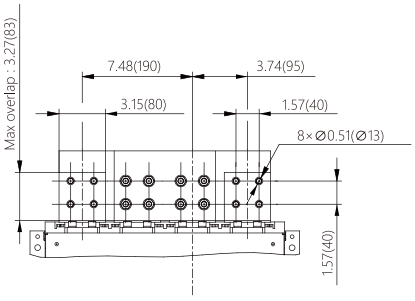




Panel perforating size







Installation Dimension

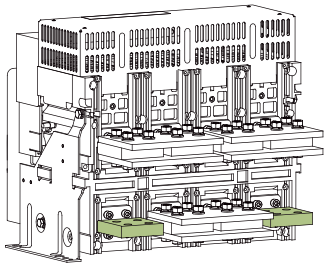
Type D

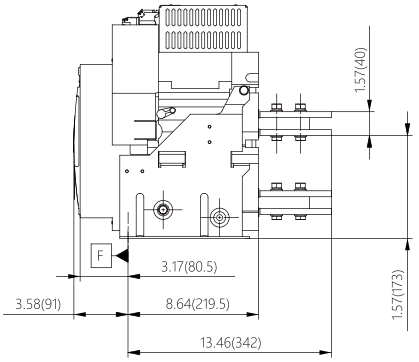
800A/1000A/1250A/1600A/2000A

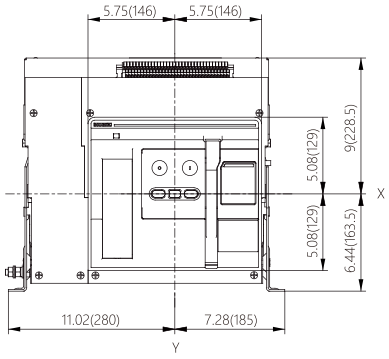
Horizontal installation

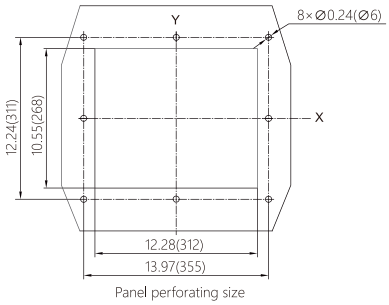
Lower supply

in(mm)

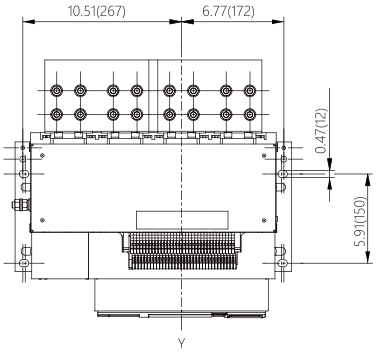


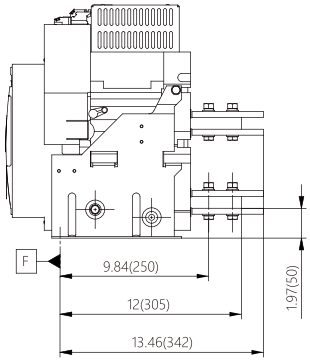


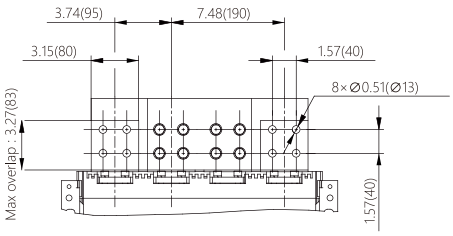




Panel perforating size







Installation Dimension

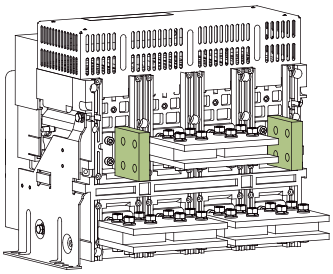
Type D

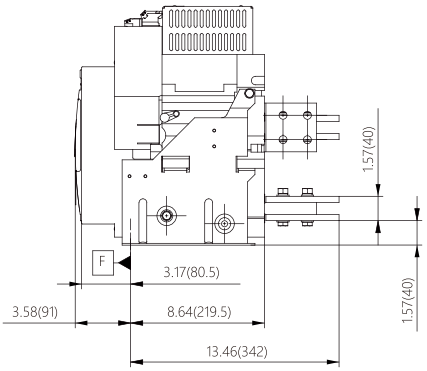
800A/1000A/1250A/1600A/2000A

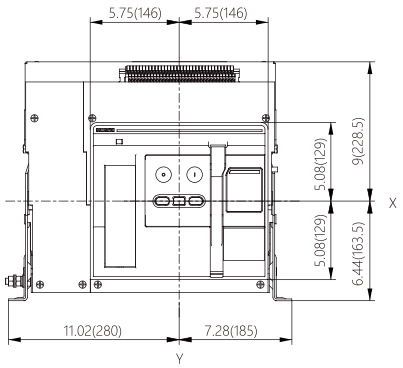
Horizontal installation

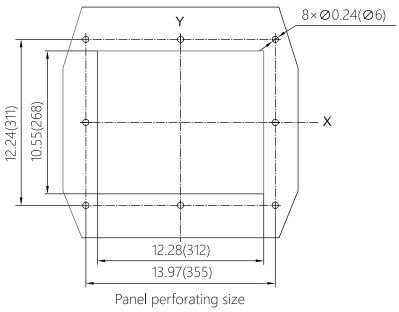
Upper supply

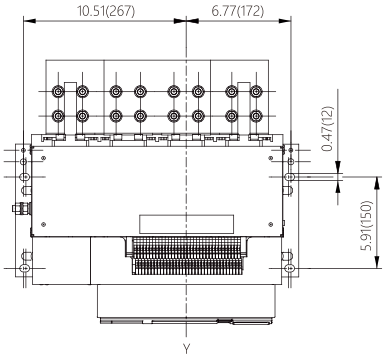
in(mm)

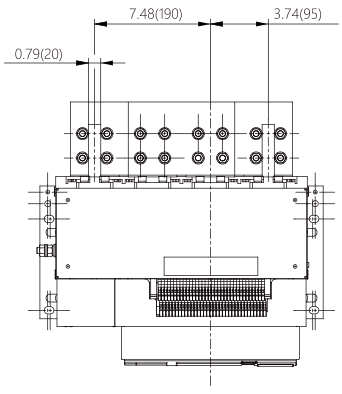


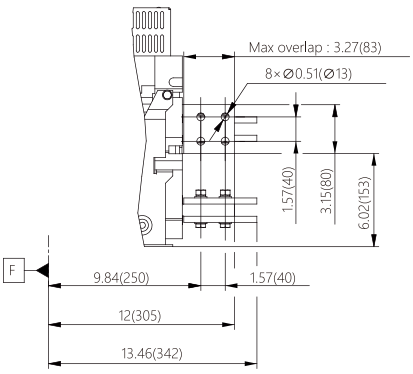












Installation Dimension

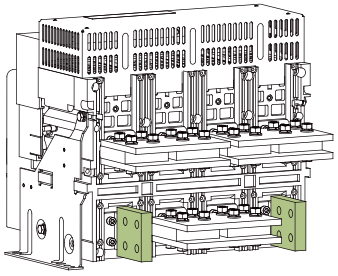
Type D

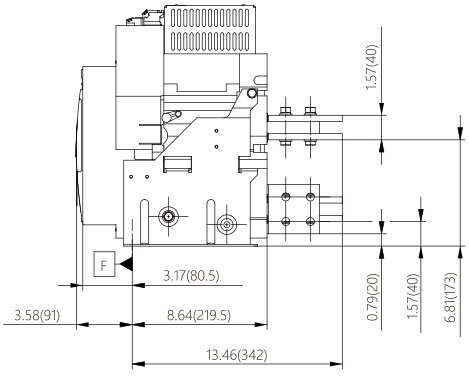
800A/1000A/1250A/1600A/2000A

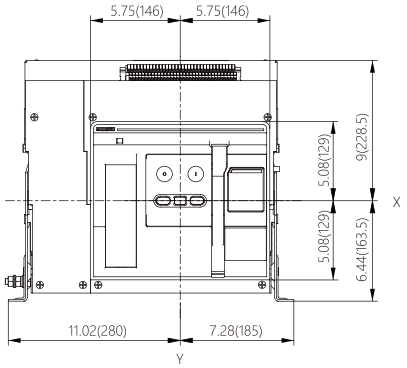
Horizontal installation

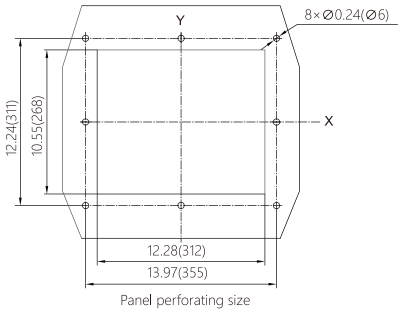
Lower supply

in(mm)

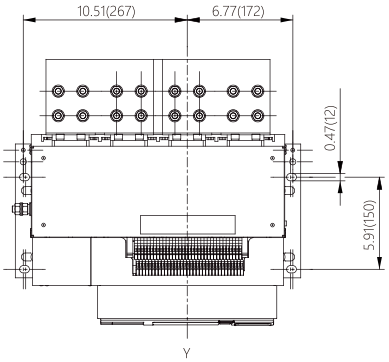


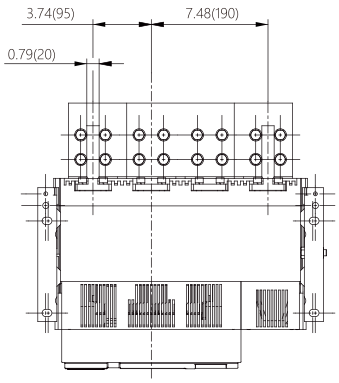


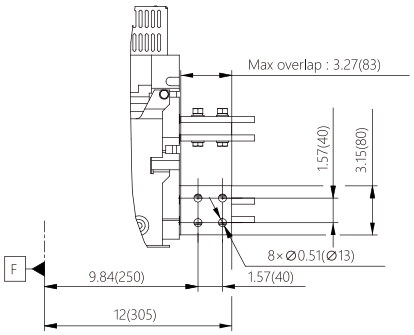




Panel perforating size







Installation Dimension

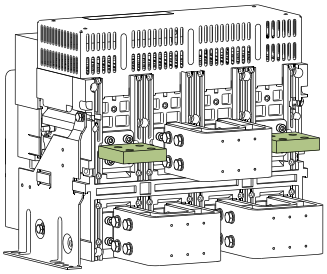
Type D

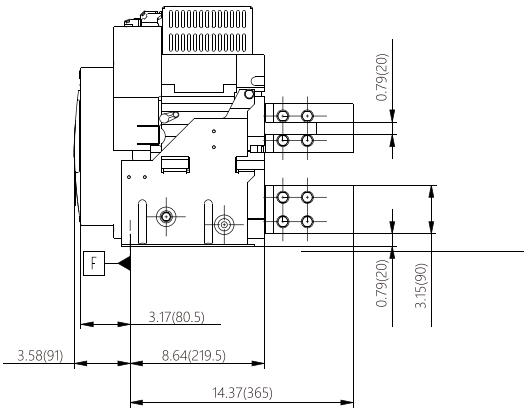
2500A

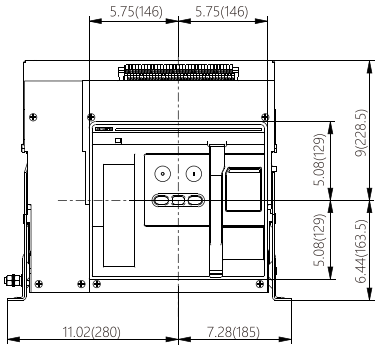
Horizontal installation

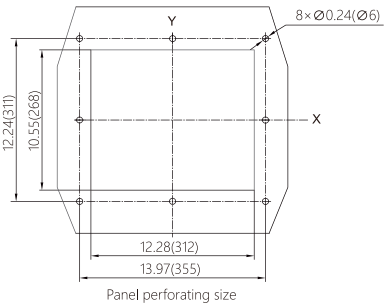
Upper supply

in(mm)

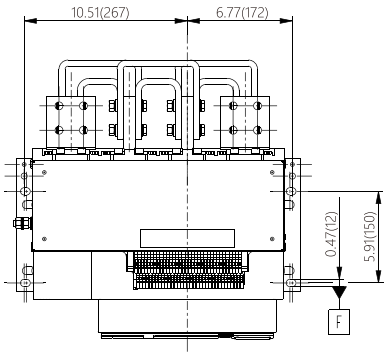


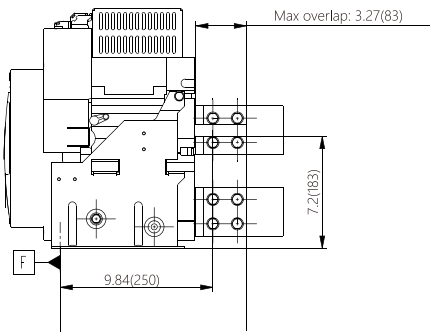


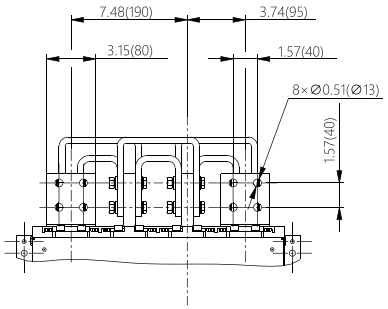




Panel perforating size







Installation Dimension

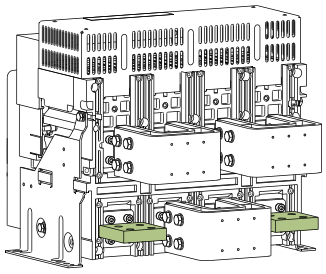
Type D

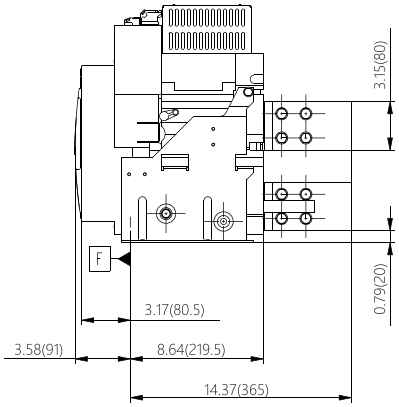
2500A

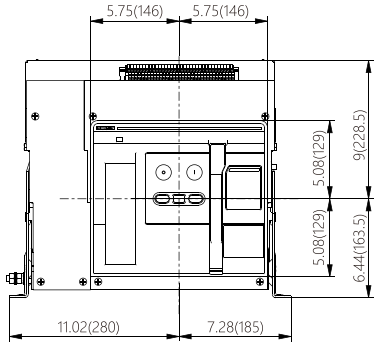
Horizontal installation

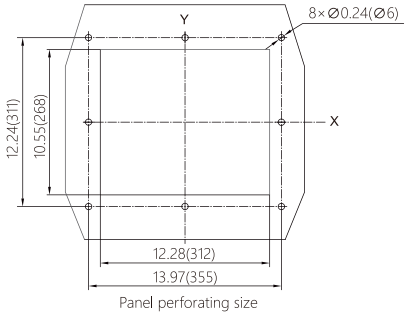
Lower supply

in(mm)

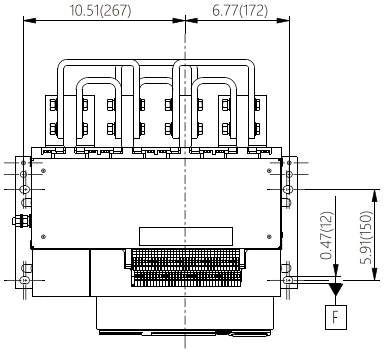


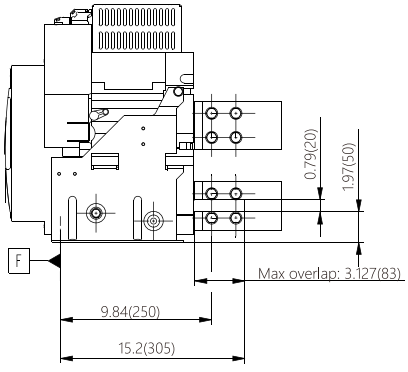


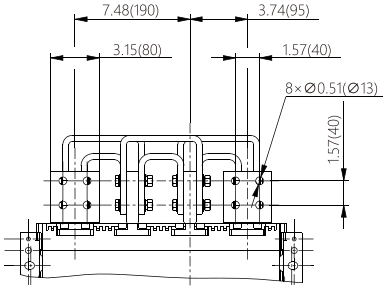




Panel perforating size







Installation Dimension

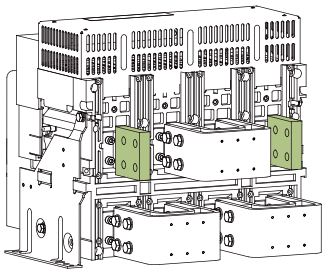
Type D

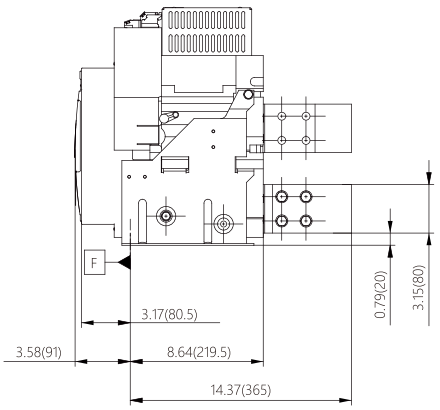
2500A

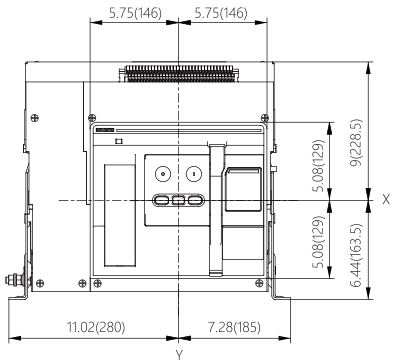
Vertical installation

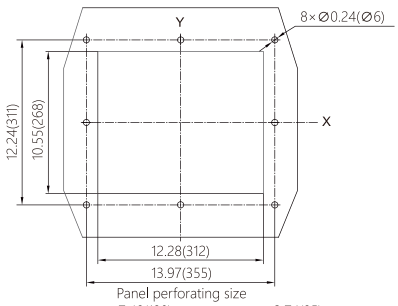
Upper supply

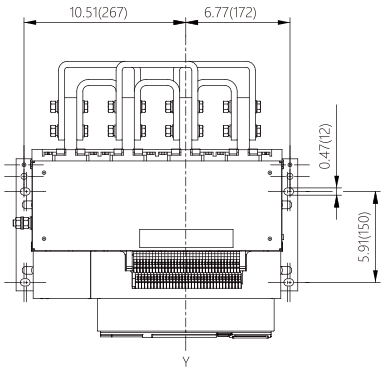
in(mm)

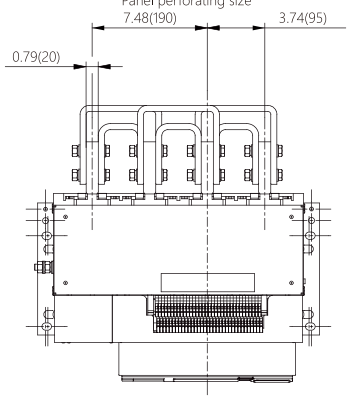


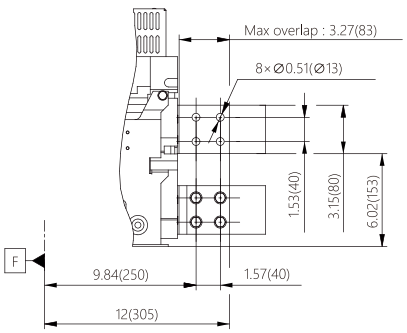












Installation Dimension

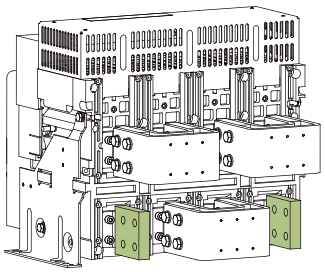
Dype D

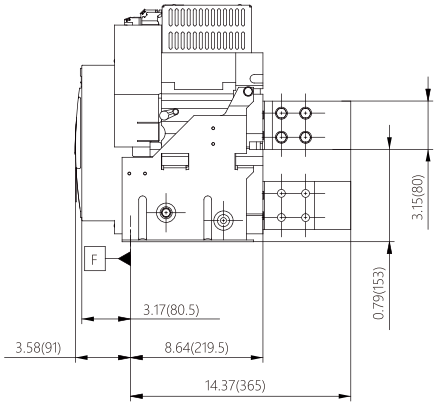
2500A

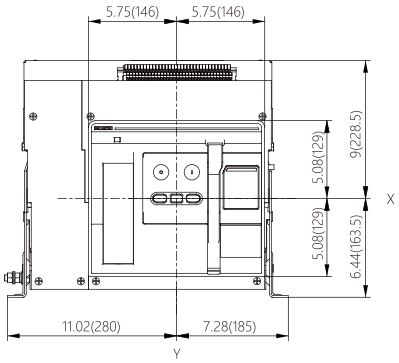
Vertical installation

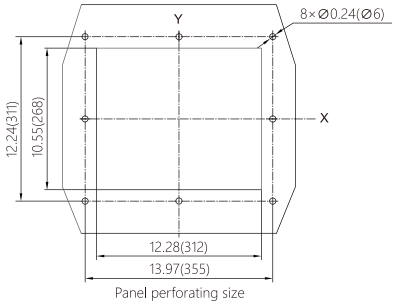
Lower supply

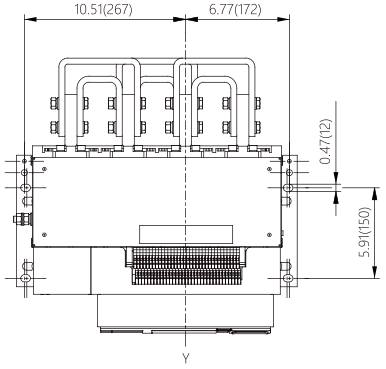
in(mm)

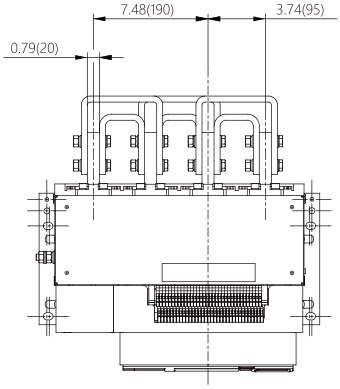


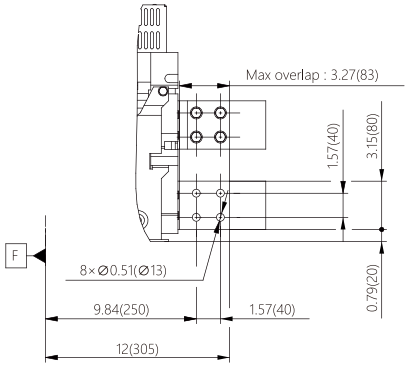






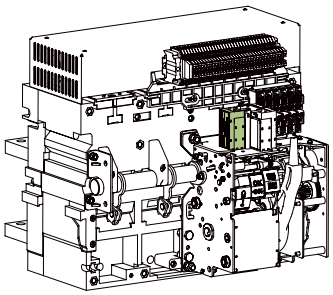






Accessories

Undervoltage release/UVT

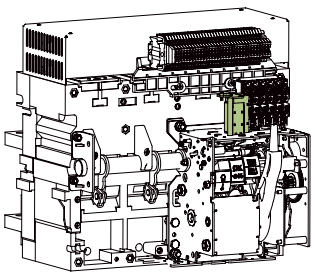


The undervoltage release is an optional device on both manually and electrically operated air switch disconnectors. It opens the switch when its supply voltage falls to 30−60% of rated voltage. If the release is not energized to 85% of its supply voltage, the switch disconnector can not be closed electrically or manually.

Undervoltage release ratings：

Control voltage	Operational voltage range (85–110%)	Dropout voltage 30-60%	Inrush/ continuous power consumption	Operating time
24-30Vdc	20-33Vdc	7-14Vdc	500W/4.5W	≤70ms
48-60Vac/dc	41-66Vac/dc	14-29Vdc	500W/4.5W	≤70ms
110-130Vac/dc	94-143Vac/dc	33-78Vac/Vdc	500W/4.5W	≤70ms
200-240Vac/dc	170-264Vac/dc	60-144Vac/ADC	500W/4.5W	≤70ms
380-440Vac	323-484Vac	114-264vac	500W/4.5W	≤70ms

Shunt trip release/SHT

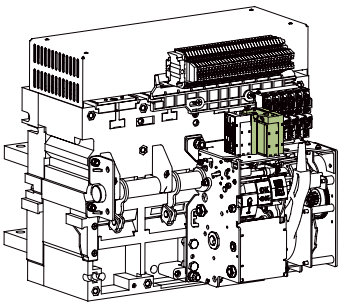


The shunt trip is an optional device on air switch disconnectors.It opens the switch disconnector instantaneously when its coil is energized by a voltage input.

Shunt trip ratings:

Control voltage	Operational voltage range (70–110%)	Inrush/ continuous power consumption	Operating time
24-30Vdc	17-33Vdc	500W/4.5W	≤50ms
48-60Vac/dc	34-66Vac/dc	500W/4.5W	≤50ms
110-130Vac/dc	77-143Vac/dc	500W/4.5W	≤50ms
208-240Vac/dc	146-264Vac/dc	500W/4.5W	≤50ms
380-440Vac	266-484Vac	500W/4.5W	≤50ms

Closing release/XF



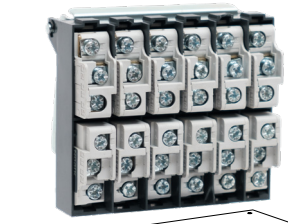
The closing release is an optional device. It remotely closes the air switch disconnector when the coil is energized by a voltage input.

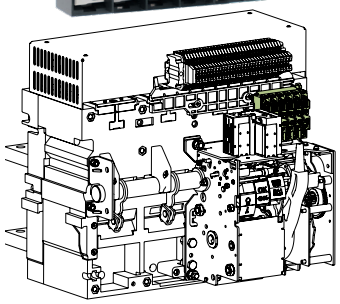
Closing release ratings:

Control voltage	Operational voltage range (70–110%)	Inrush/ continuous power consumption	Operating time
24-30Vdc	17-33Vdc	500W/4.5W	≤70ms
48-60Vac/dc	34-66Vac/dc	500W/4.5W	≤70ms
110-130Vac/dc	77-143Vac/dc	500W/4.5W	≤70ms
208-240Vac/dc	146-264Vac/dc	500W/4.5W	≤70ms
380-440Vac	266-484Vac	500W/4.5W	≤70ms

Accessories

Auxiliary contact/AX

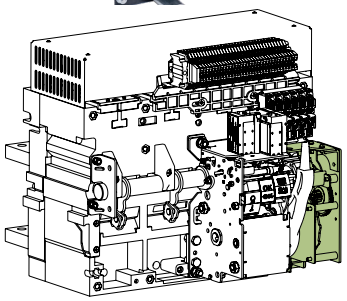




The auxiliary contact remotely monitors ON/OFF position of air switch disconnector from remote place.
Contact configuration:
44: 4NO and 4NC;66: 6NO and 6NC;
44C: 4NO or 4NC;66C: 6NO or 6NC.

Voltage /V		Rated Current /A
AC	240	5
	480	2
DC	110	0.25
	220	0.25

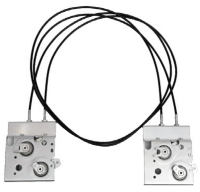
Motor operator

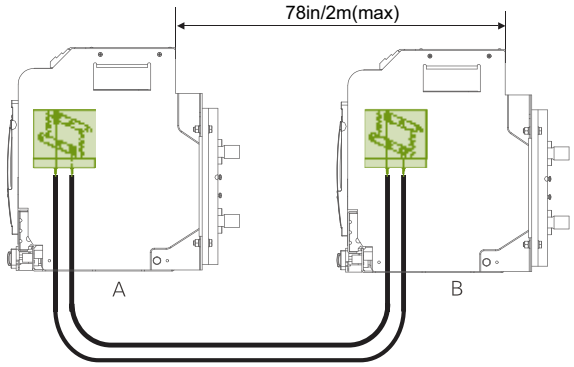


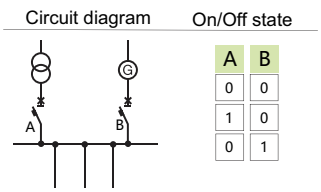
The electric motor charges the closing spring of mechanism when the air switch disconnector is closed.
Factory installed only.
Mechanical charging handle can be used when maintaining or without power supply.
Equipped with a limit switch contact which signals that spring is charged.

Control voltage	Operational voltage range (85–110%)	Inrush/continuous power consumption	Charging time
24-30Vdc	20-33Vdc	800W/200W	≤4s
48-60Vac/dc	41-66Vac/dc	1200W/200W	≤4s
110-130Vac/dc	94-143Vac/dc	1800W/180W	≤4s
200-240Vac/dc	170-264Vac/dc	1800W/180W	≤4s
380-440Vac	323-484Vac	1800W/180W	≤4s

Mechanical interlocks with cables



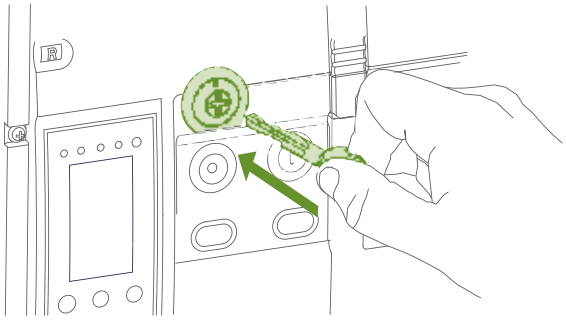




For mutual interlocking of 2 or 3 (in preparation) switches
Mechanical interlock with cable
Cable length for maximum distance of mounting positions of interlocks 78in(2m)
Suitable for ASD25DC air switch disconnector.
Scope of delivery: 2 interlocks and 2 cables (2 switches version), 3 interlocks and 6 cables (3 switches version)

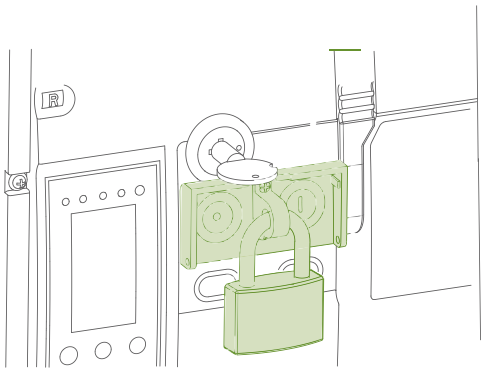
Accessories

OFF position keylock/KLK



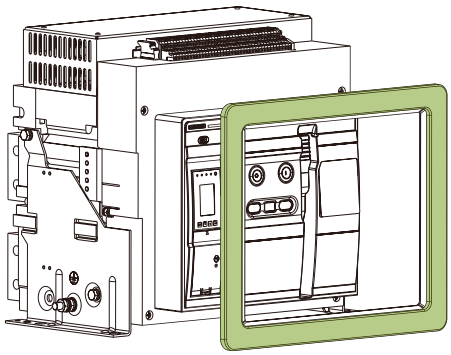
Suitable for ASD25DC air switch disconnector
Block a switch in OFF position to ensure the switch can not be closed
One switch is provided with one lock and one key
Two switch are provided with two locks and one key
Three switch are provided with three locks and two keys

Pushbutton lock device/VBP



The cover prevents the access to control push button of the switch
Factory instolled only
Scope of delivery: Lockable cover (lock with key is not a part of delivery)

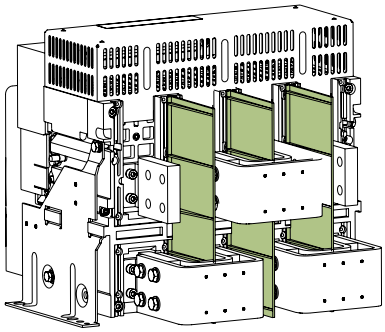
Doorframes



In the scope of delivery for each switch
Degree of protection IP40

Accessories

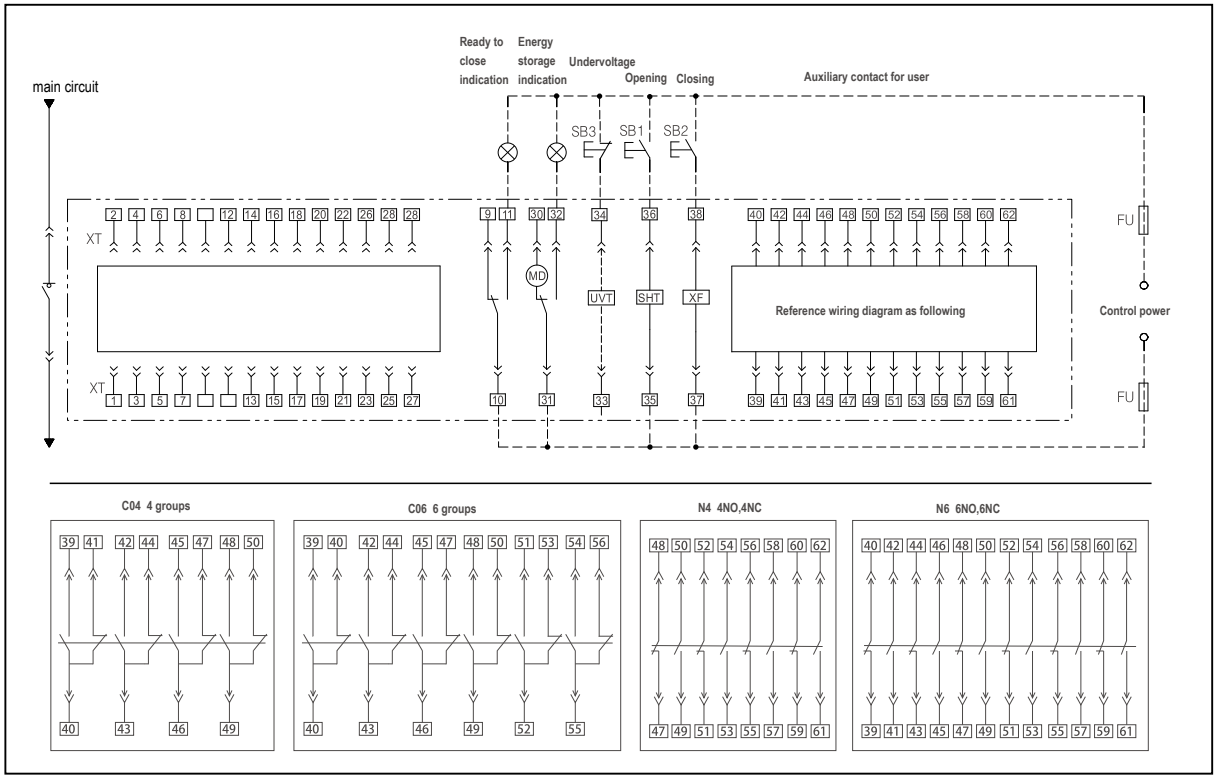
Phase barriers



Improve insulation level between main terminals
Delivered as set (3 pcs for 4P version)

Control circuit wiring

ASD25DC air switch disconnector control circuit reference wiring diagram



- Ready to close contact indication (optional)
  9#,10#,11#: ready to close contact indication;
  Signal indicator should be provided by user itself.
- MD spring charge motor working power
  30#, 31#, 32#: MD spring charge motor working power input;
  Spring chargr indicator should be provided by user itself.
- UVT undervoltage relasse (optional)
  33#, 34#: UVT undervoltage release working power input;
  SB3 emergency disconnecting button should be provided by user itself.
  Undervoltage release is within special order range, wiring are not provided for regular supply.
- SHT shunt release
  35#, 36#: SHT shunt release working power input, if DC working voltage is used, 35# is positive pole, 36# is negative pole. SB1 opening button should be provided by user itself.
- XF shunt release
  37#, 38#: XF closing coil working power input, if DC working voltage is used, 37# is positive pole, 38# is negative pole. SB2 closing button should be provided by user itself.
- AX1 - AX6 auxiliary contacts
  39# - 62# (AX1 - AX6): C04 for regular suuply, C06、N4、N6 for specially ordered.

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