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**Susol**

# UL DC SWITCH-DISCONNECTOR



**LS** ELECTRIC

# 1500Vdc UDA Series for PV/ESS System

1. Application for PV/ESS system
2. 100% rated switch disconnecter (Molded circuit switch)
3. Draw-out or fixed mount, 3/4 pole construction
4. High short circuit withstand capacity: 100kA
5. Accessories common to the UL Susol series
6. Maintained the overall dimensions of UL Susol series
7. UL listed (UL489B & UL489F)

# Susol

## Contents

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### DC Switch-disconnectors

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Rated nominal voltage : 1250 Vdc (4P) / 800 Vdc (3P)  
 Rated maximum voltage : 1500 Vdc (4P) / 1000 Vdc (3P)  
 Rated current : 2500 A / 4000 A  
 Short circuit rating : 85 kA / 100 kA

800~2500AF


800~4000AF




## Codes and standards

UDA series are manufactured and tested in accordance with the following standards

**UL 489 B**  
**UL 489 F**

| Mark  | File Number                               |
|---|---|
|  | E493630 (UL 489 B, Molded circuit switch) |
|   | E491572 (UL 489 F, Molded circuit switch) |
|   | E223241 (Accessories)                     |
|   | E494756 (Adapters)                        |


**UL489 B:** Molded-Case Switches for Use with Photovoltaic(PV) Systems  
**UL489 F:** Molded-Case Switches for Use with Battery Power Supplies




**UDA-40E4-00A**

PV / BPS Molded Circuit Switch  
 UL 489B (50°C) / UL 489F (40°C)

|                              |      |
|------------------------------|------|
| Rated Current (A)            | 4000 |
| Pole                         | 4P   |
| Rated Nominal Voltage (V dc) | 1250 |
| Rated Maximum Voltage (V dc) | 1500 |
| Short Circuit Rating (kA)    | 100  |




File E326950  
File E491572



For 100 kA short circuit current at 1250 V dc nominal 1500 V dc maximum rating the switch is suitable only for use with BPS

For ungrounded system only / Remotely operated  
 Caution—Does not provide overcurrent protection

Cat. **M2D2D2HX 000U2 UL**



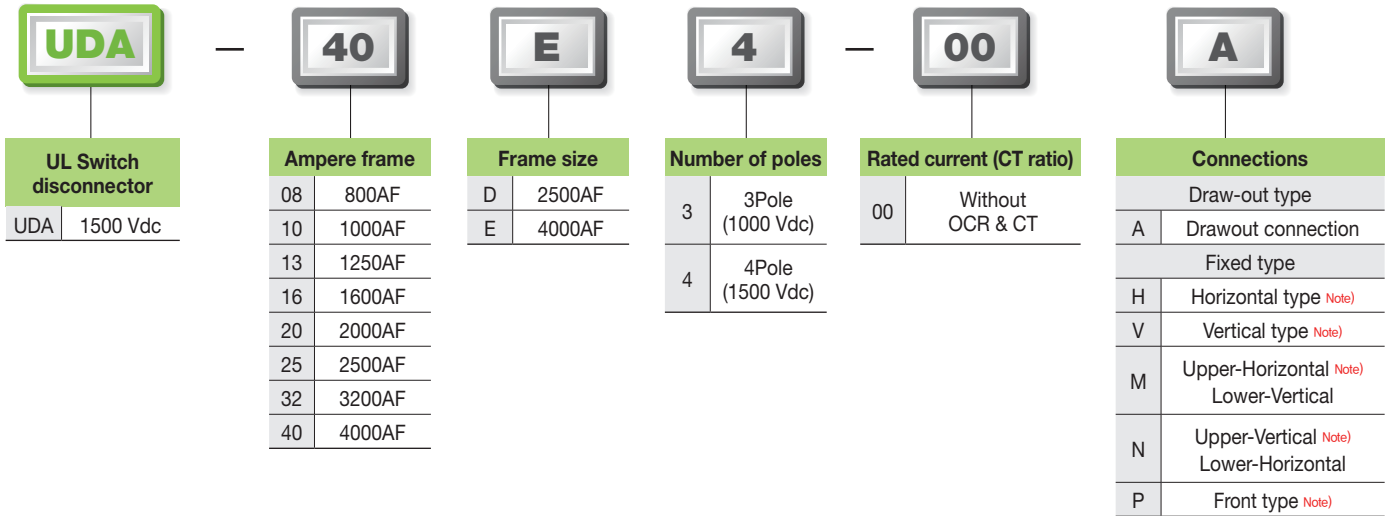
MFG, Date : **2017.08**

Serial No. : **170810-7270.01**

MADE IN KOREA

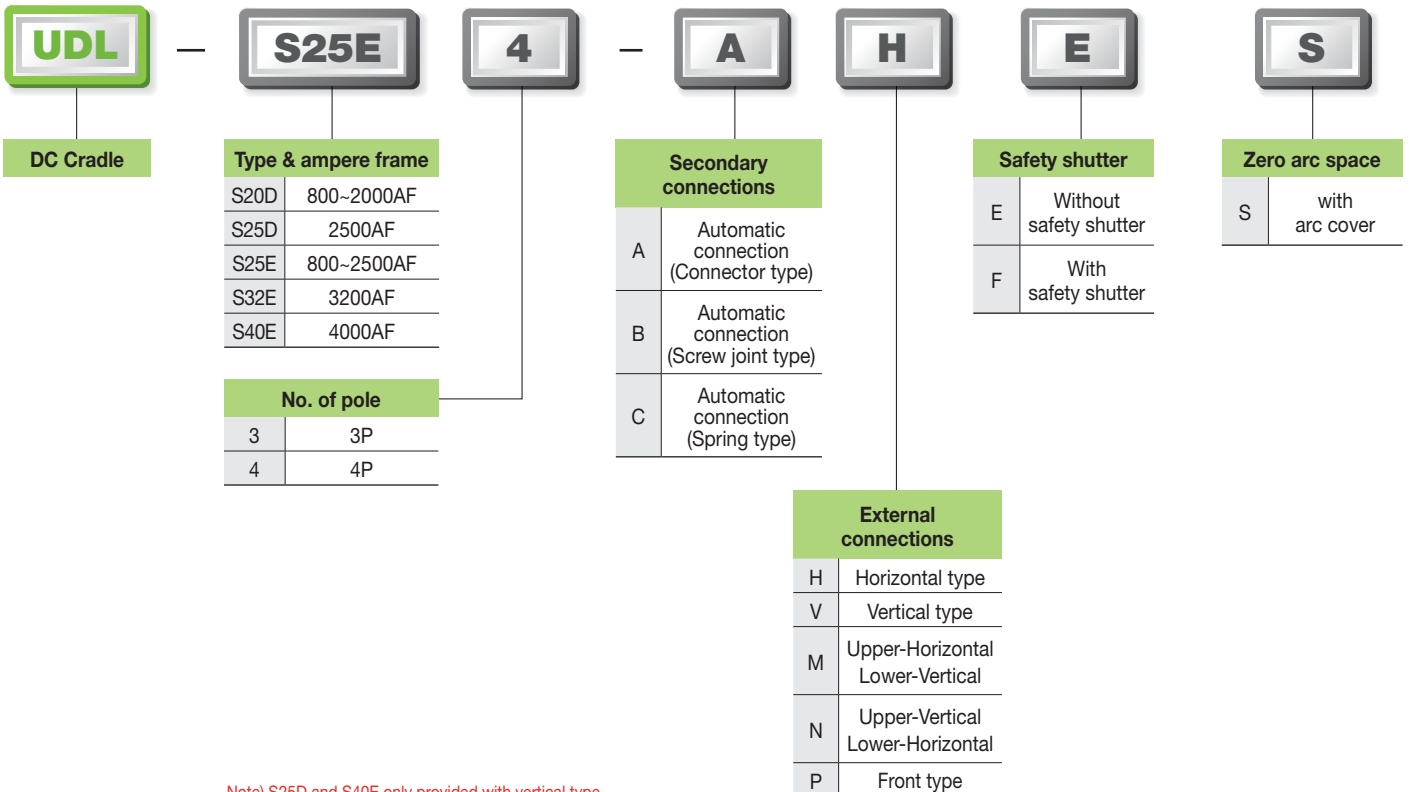
# Ordering

## Main frame



*Note) 1, 25D and 40E only provided with vertical type  
2, Front terminal only for 08-16D and 08-25E*

## Cradle



*Note) S25D and S40E only provided with vertical type*

## Accessories

**UDA-40E4-00A**

**M1**

**Motor rated voltage**

|    |                 |
|----|-----------------|
| MA | Without motor   |
| M1 | AC/DC 100V~130V |
| M2 | AC/DC 200V~250V |
| M3 | DC 125V         |
| M4 | DC 24V~30V      |
| M5 | DC 48V~60V      |
| M8 | AC 48V          |

**D1**

**Shunt coil rated voltage**

|    |                    |
|----|--------------------|
| D0 | Without shunt coil |
| D1 | AC/DC 100V~130V    |
| D2 | AC/DC 200V~250V    |
| D3 | DC 125V            |
| D4 | DC 24V~30V         |
| D5 | DC 48V~60V         |
| D7 | AC 48V             |

**HX**

**Trip relay**

|     |                    |
|-----|--------------------|
| 000 | Without trip relay |
|-----|--------------------|

**000**

**U1**

**UVT coil rated voltage**

|    |                  |
|----|------------------|
| U0 | Without UVT coil |
| U1 | AC/DC 100V~130V  |
| U2 | AC/DC 200V~250V  |
| U3 | DC 125V          |
| U4 | DC 24V~30V       |
| U5 | DC 48V~60V       |
| U6 | AC 380V~480V     |
| U7 | AC 48V           |

**B**

**Closing coil rated voltage**

|    |                      |
|----|----------------------|
| D0 | Without closing coil |
| D1 | AC/DC 100V~130V      |
| D2 | AC/DC 200V~250V      |
| D3 | DC 125V              |
| D4 | DC 24V~30V           |
| D5 | DC 48V~60V           |
| D7 | AC 48V               |

**Aux. contact & charging types**

|    |                               |
|----|-------------------------------|
| GX | High capacity OFF-charge 3a3b |
| GC | High capacity ON-charge 3a3b  |
| HX | High capacity OFF-charge 5a5b |
| HC | High capacity ON-charge 5a5b  |
| JC | High capacity ON-charge 6a6b  |

\* UVT Delay module is available over AC/DC 48V

| Option table |             |  |           |             |                |
|--------------|-------------|--|-----------|-------------|----------------|
| Character    | Option name |  | Character | Option name |                |
| S            | CS2         | Charge switch communication                            | H1        | SHT2        | AC/DC 100-125V |
| B            | B           | On/Off button lock                                     | H2        |             | AC/DC 200-250V |
| M            | MI          | Mechanical interlock                                   | H3        |             | DC 125V        |
| D            | DI or MOC   | Door interlock or MOC (Mechanism operated cell switch) | H4        |             | DC 24-30V      |
|              |             |  | H5        |             | DC 48-60V      |
| K            | K1          | Key lock   | H6        |             | AC 380-480V    |
| K2           | K2          | Key interlock set                                      | H7        |             | AC 48V         |
| K3           | K3          | Key lock double  |           |             |                |
| R            | RCS         | Ready to close switch                                  |           |             |                |
| T            | TM          | Temperature monitoring                                 |           |             |                |

# Ratings

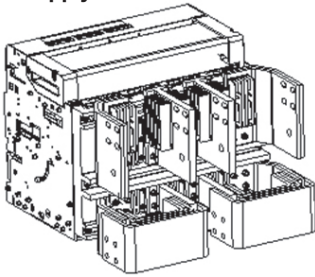


| Brand                            |                   | Susol                           |                                 |                                 |         |         |         |          |                                 |                                 |          |           |           |  |  |
|----------------------------------|-------------------|---------------------------------|---------------------------------|---------------------------------|---------|---------|---------|----------|---------------------------------|---------------------------------|----------|-----------|-----------|--|--|
| Rated nominal voltage            | Vdc               | DC 1250 V (4P) / DC 800 V (3P)  |                                 |                                 |         |         |         |          |                                 |                                 |          |           |           |  |  |
| Rated maximum voltage            | Vdc               | DC 1500 V (4P) / DC 1000 V (3P) |                                 |                                 |         |         |         |          |                                 |                                 |          |           |           |  |  |
| Poles                            | (P)               | 4P / 3P                         |                                 |                                 |         |         |         |          |                                 |                                 |          |           |           |  |  |
| Version                          |                   | Fixed / Draw-out                |                                 |                                 |         |         |         |          |                                 |                                 |          |           |           |  |  |
| Standard                         |                   | UL 489B, UL 489F                |                                 |                                 |         |         |         |          |                                 |                                 |          |           |           |  |  |
| Type                             |                   | UDA-08D                         | UDA-10D                         | UDA-13D                         | UDA-16D | UDA-20D | UDA-25D | UDA-08E  | UDA-16E                         | UDA-20E                         | UDA-25E  | UDA-32E   | UDA-40E   |  |  |
| Ampere frame                     | (AF)              | 800                             | 1000                            | 1250                            | 1600    | 2000    | 2500    | 800      | 1600                            | 2000                            | 2500     | 3200      | 4000      |  |  |
| Short circuit withstand current  | (kA)              | 85                              |                                 |                                 |         |         |         | 100      |                                 |                                 |          |           |           |  |  |
| Operating time (ms)              | Max. opening time | 40ms                            |                                 |                                 |         |         |         |          |                                 |                                 |          |           |           |  |  |
|                                  | Max. closing time | 80ms under                      |                                 |                                 |         |         |         |          |                                 |                                 |          |           |           |  |  |
| Lift cycle (times)               | Mechanical        | 12,500                          |                                 |                                 |         |         |         |          |                                 |                                 |          |           |           |  |  |
|                                  | Electrical        | 3500                            | 2500                            | 1500                            | 1000    | 600     | 400     | 10000    | 8000                            | 5000                            | 3000     | 2000      |           |  |  |
| Weight lb (kg)                   | Draw-out type     | Main body with cradle           | 3P                              | 154 (70)                        |         |         |         | 165 (75) | 214 (97)                        |                                 |          | 245 (111) | 326 (148) |  |  |
|                                  |                   |                                 | 4P                              | 187 (85)                        |         |         |         | 201 (91) | 269(122)                        |                                 |          | 309 (140) | 414 (188) |  |  |
|                                  | Only cradle       | 3P                              | 71 (32)                         |                                 |         |         | 82 (37) | 99(45)   |                                 |                                 | 123 (56) | 205 (93)  |           |  |  |
|                                  |                   | 4P                              | 84 (38)                         |                                 |         |         | 97 (44) | 121(55)  |                                 |                                 | 152 (69) | 256 (116) |           |  |  |
|                                  | Fixed type        | Motor charging type             | 3P                              | 77 (35)                         |         |         |         | 90 (41)  | 101 (46)                        |                                 |          | 110 (50)  | 196 (89)  |  |  |
|                                  |                   |                                 | 4P                              | 99 (45)                         |         |         |         | 112 (51) | 126 (57)                        |                                 |          | 137 (62)  | 249 (113) |  |  |
| External dimensions Inches (mm)  | Draw-out type     | H×W×D                           | 3P                              | 16.93×13.15×16.02 (430×334×407) |         |         |         |          |                                 | 16.93×16.22×16.02 (430×412×407) |          |           |           |  |  |
|                                  |                   |                                 | 4P                              | 16.93×16.5×16.02 (430×419×407)  |         |         |         |          |                                 | 16.93×20.75×16.02 (430×527×407) |          |           |           |  |  |
|                                  | Fixed type        | H×W×D                           | 3P                              | 11.81×11.81×11.61 (300×300×295) |         |         |         |          |                                 | 11.81×14.88×11.61 (300×378×295) |          |           |           |  |  |
|                                  |                   |                                 | 4P                              | 11.81×15.16×11.61 (300×385×295) |         |         |         |          |                                 | 11.81×19.41×11.61 (300×493×295) |          |           |           |  |  |
| Enclosure dimensions Inches (mm) | H×W×D             | 3P                              | 19.69×15.75×13.39 (500×400×340) |                                 |         |         |         |          | 19.69×19.69×13.39 (500×500×340) |                                 |          |           |           |  |  |
|                                  |                   | 4P                              | 19.69×19.69×13.39 (500×500×340) |                                 |         |         |         |          | 19.69×24.21×13.39 (500×615×340) |                                 |          |           |           |  |  |

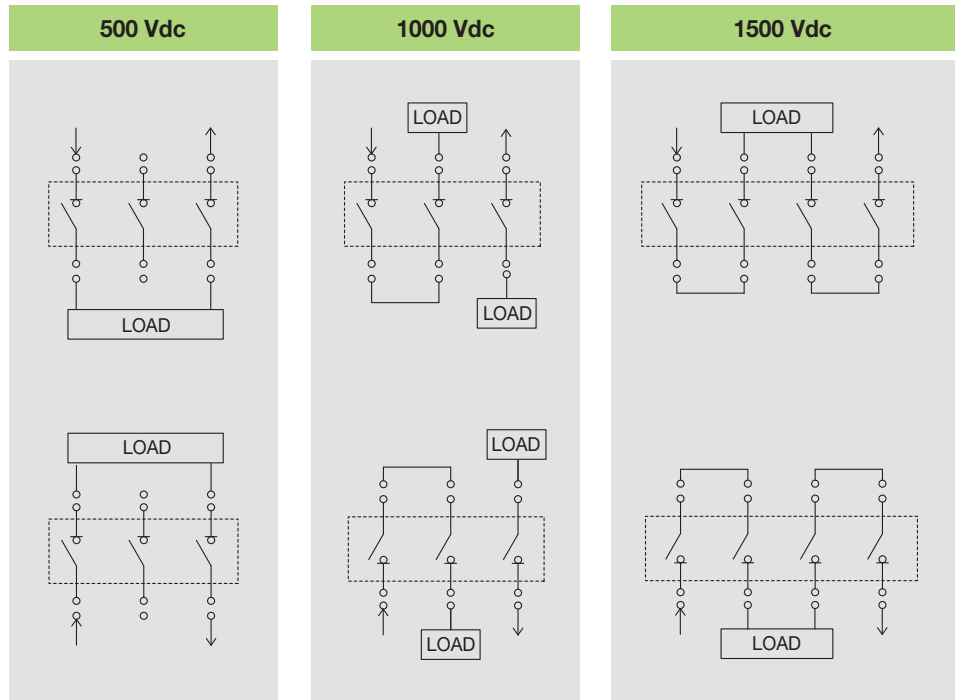
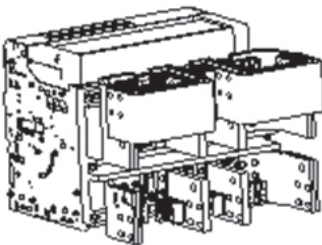
Note 1) External dimensions are excluded external terminal.  
 Note 2) UL certificate(UL489B/F) is listed on UL site.

## Connection type

Upper supply



Lower supply



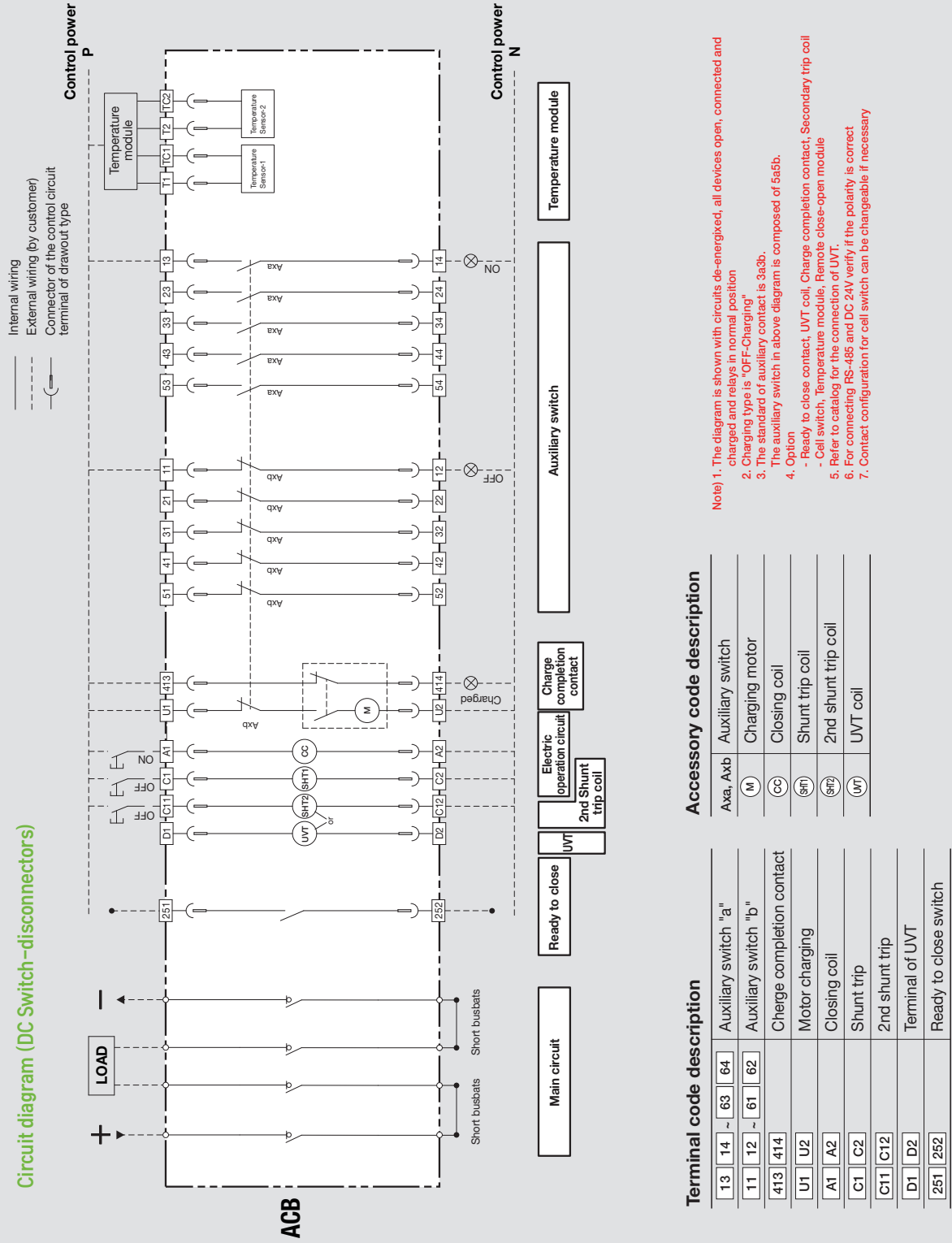
Note) If you set up connections not involved in the instruction above, ask the LS technical team.

## Specification

| Type       | AF        | Ordering number                       | 3D configuration | Configuration   |
|------------|-----------|---------------------------------------|------------------|---|
| UDA series | D: 2000AF | 70223466502<br>3P : 1 ea<br>4P : 2 ea |                  | Short busbar: 140mm × 10T × 2ea<br>Bolt: M12 × 55, 8ea<br>Nut: M12, 8ea<br>Spring washer, Plain washer, Heat sink                           |
|            | D: 2500AF | 70223466500<br>3P : 1 ea<br>4P : 2 ea |                  | Short busbar: 125mm × 12T × 1ea<br>Bolt: M12 × 45, 8ea<br>Nut: M12, 8ea<br>Spring washer, Plain washer, Heat sink                           |
|            | E: 2500AF | 70223467601<br>3P : 1 ea<br>4P : 2 ea |                  | Short busbar: 75mm × 10T × 2ea<br>Bolt: M12 × 50 × 4ea<br>Nut: M12, 4ea<br>Spring washer, Plain washer                                      |
|            | E: 3200AF | 70223467602<br>3P : 1 ea<br>4P : 2 ea |                  | Short busbar: 75mm × 10T × 2ea<br>Bolt: M12 × 50 × 4ea<br>Nut: M12, 4ea<br>Spring washer, Plain washer                                      |
|            | E: 4000AF | 70223467603<br>3P : 1 ea<br>4P : 2 ea |                  | Short busbar: 125mm × 10T × 3ea<br>Spacer busbar: 125mm × 10T × 2ea<br>Bolt: M12 × 50 × 8ea<br>Nut: M12, 4ea<br>Spring washer, Plain washer |

# Circuit diagram

Circuit diagram (DC Switch-disconnectors)

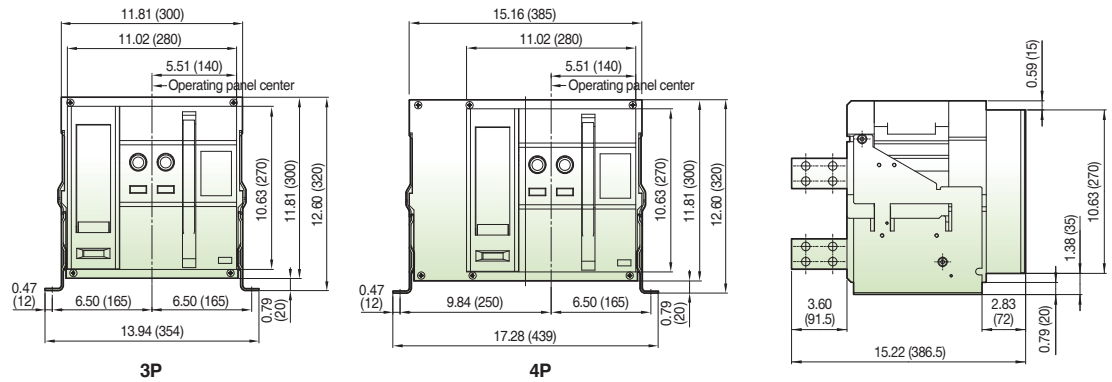




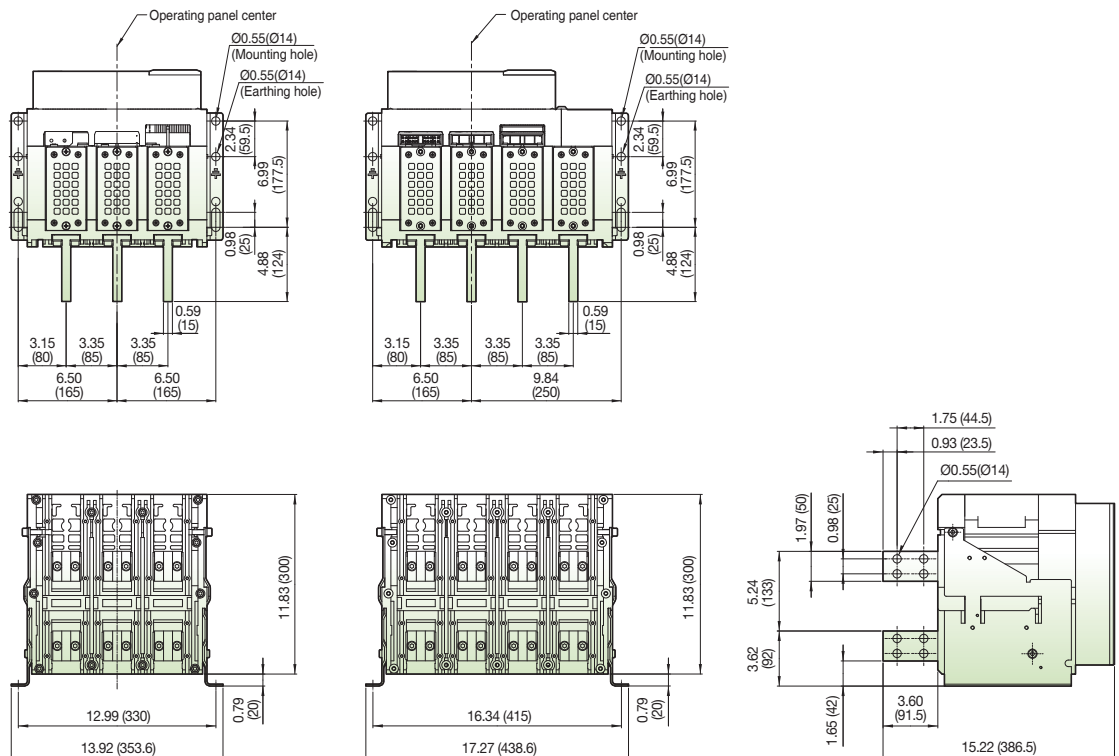
## Fixed type 800~2000A (UDA-08~20D)

[inch (mm)]

### Front view



### Vertical type

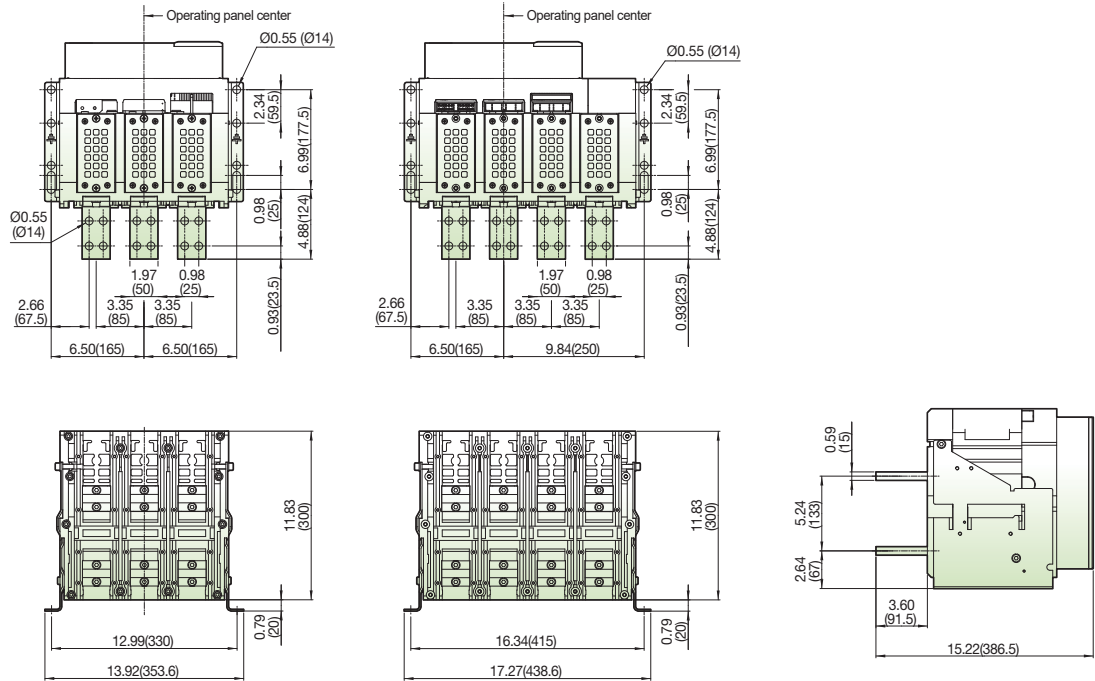


# Dimensions

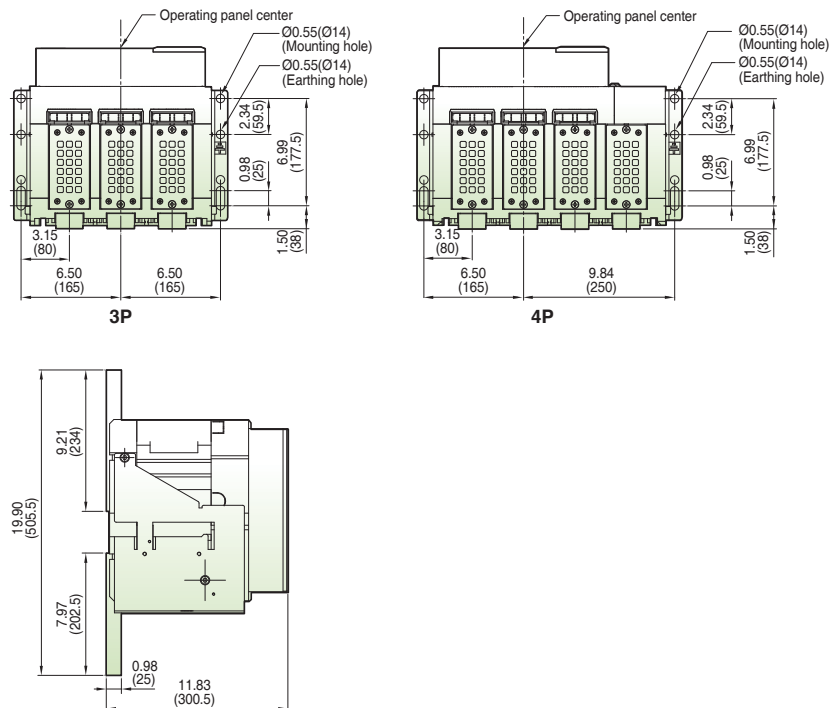
## Fixed type 800~2000A (UDA-08~20D)

[inch (mm)]

### Horizontal type



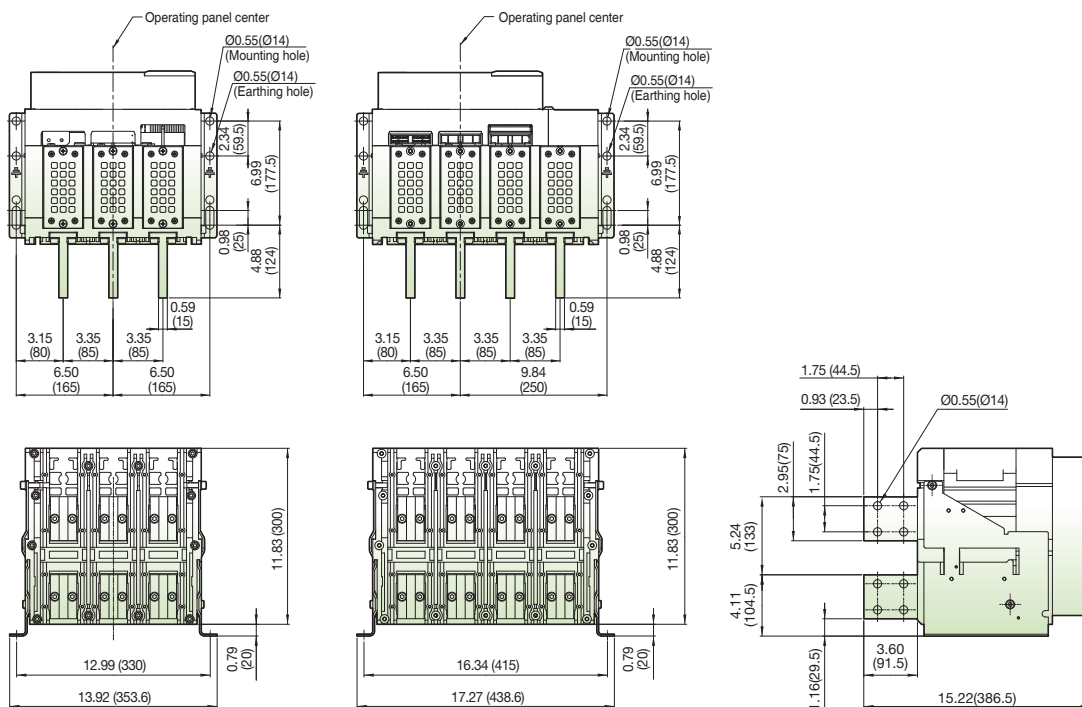
### Front connection type



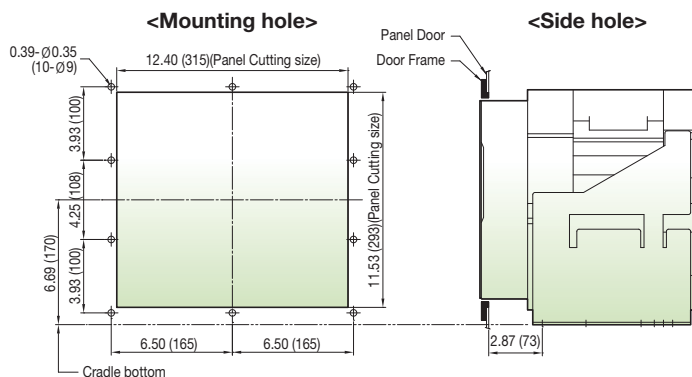
# Fixed type 2500A (UDA-25D)

[inch (mm)]

## Vertical type



## Panel front door

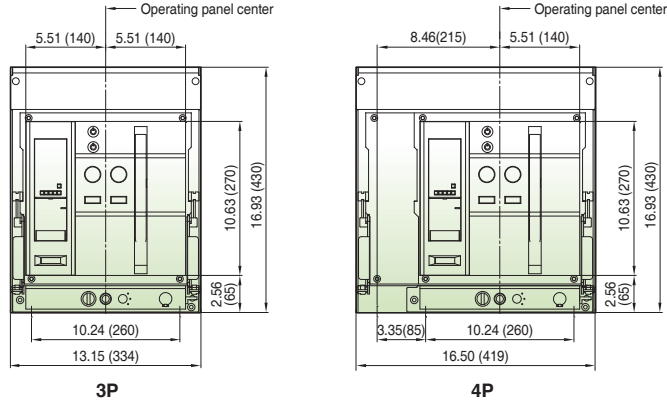


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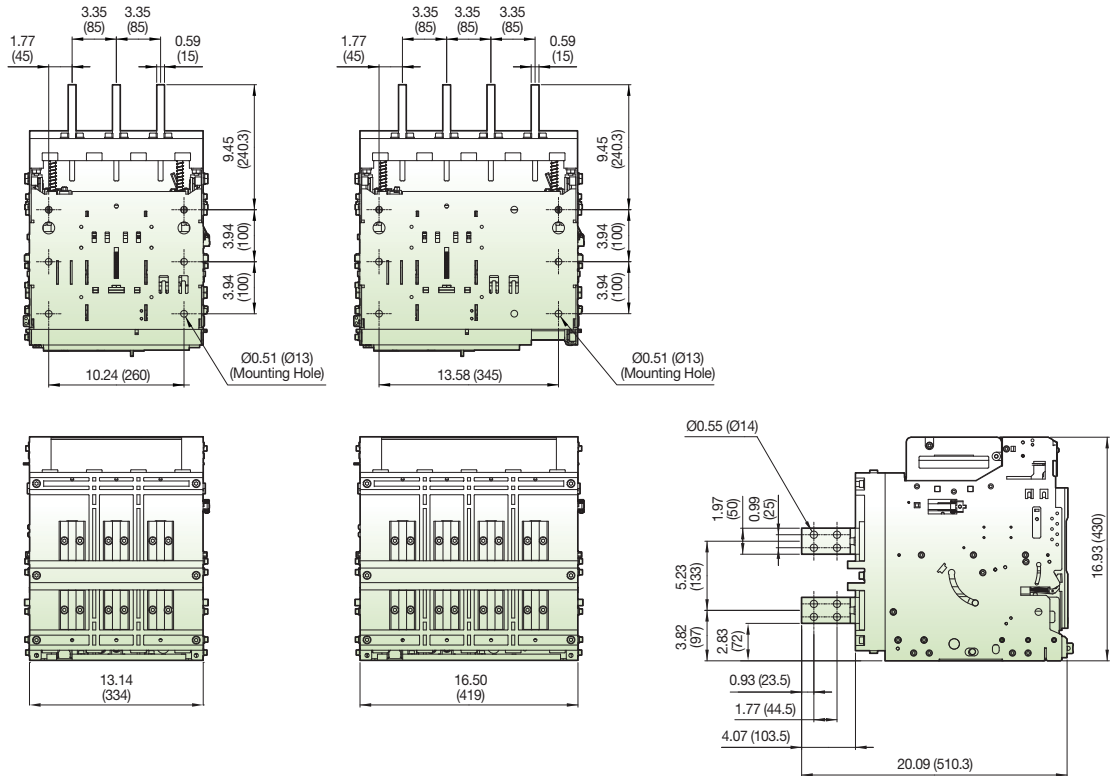
## Draw-out type 800~2000A (UDA-08~20D)

[inch (mm)]

### Front view

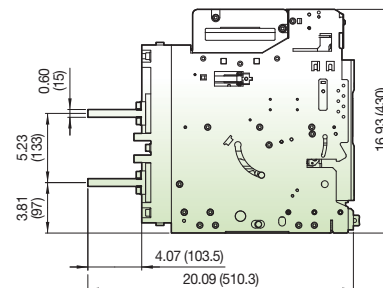
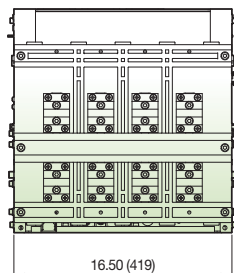
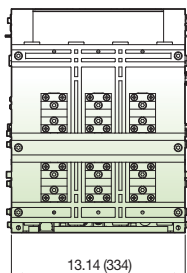
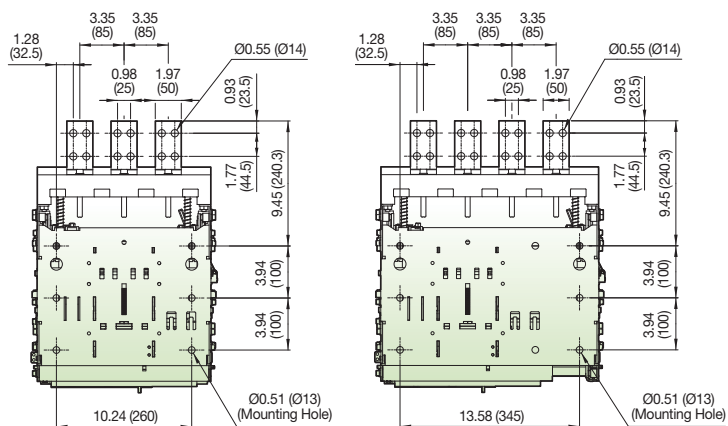


### Vertical type



[inch (mm)]

Horizontal type

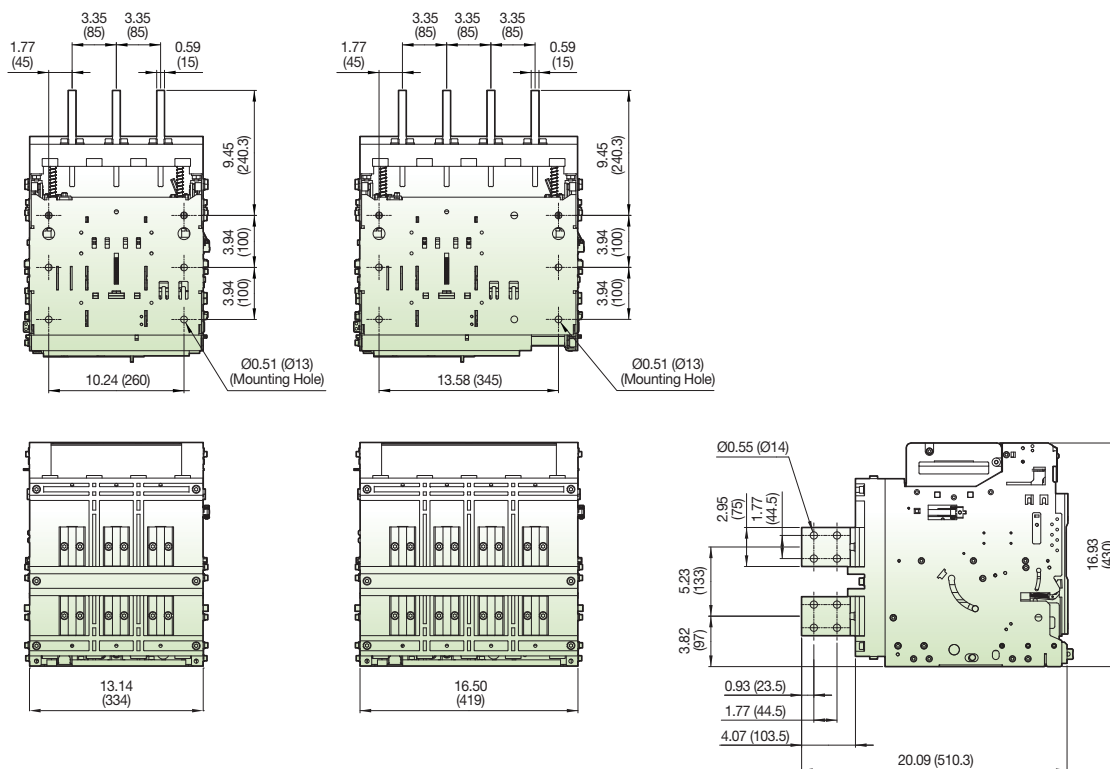


# Dimensions

## Draw-out type 2500A (UDA-25D)

[inch (mm)]

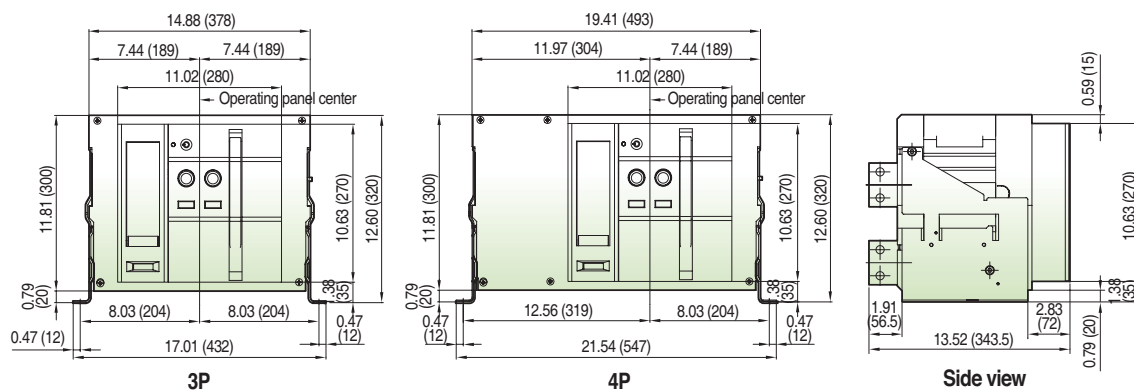
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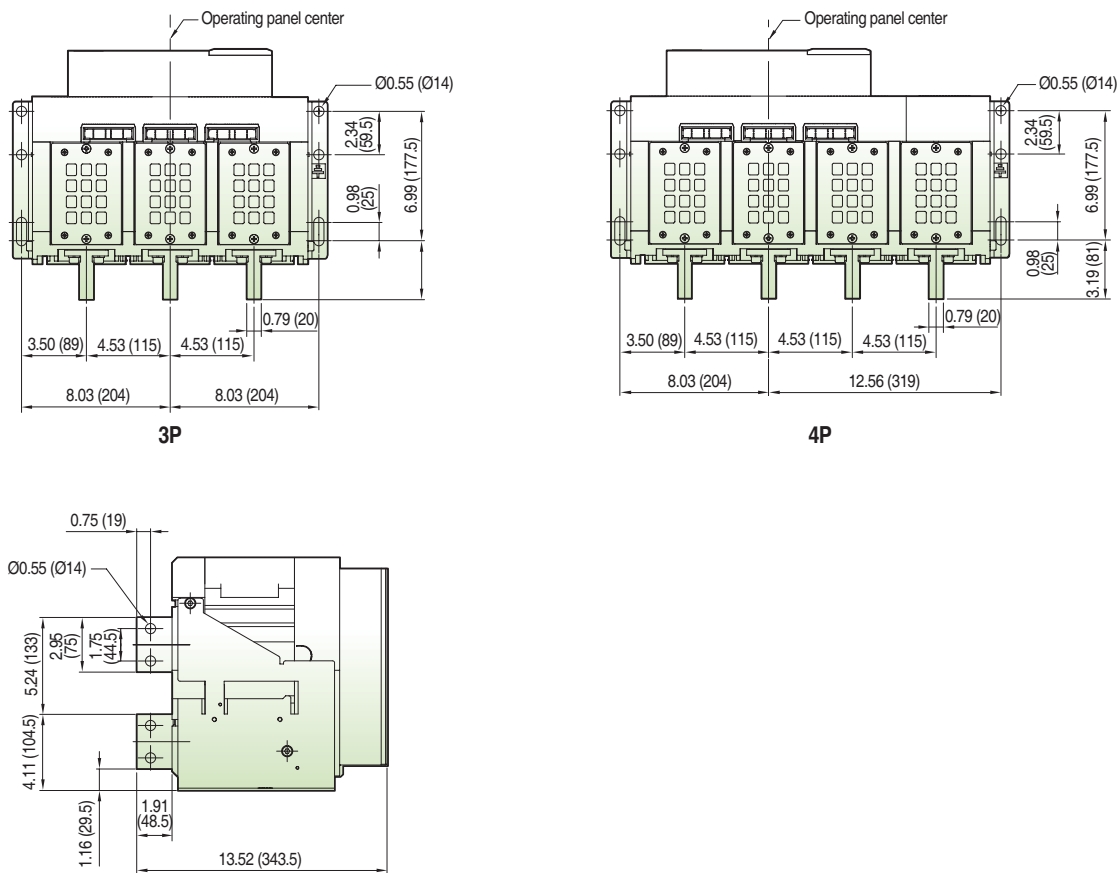
## Fixed type 800~2500A (UDA-08~25E)

[inch (mm)]

### Front view



### Vertical type

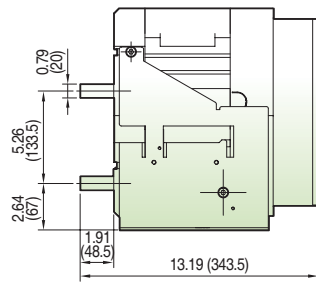
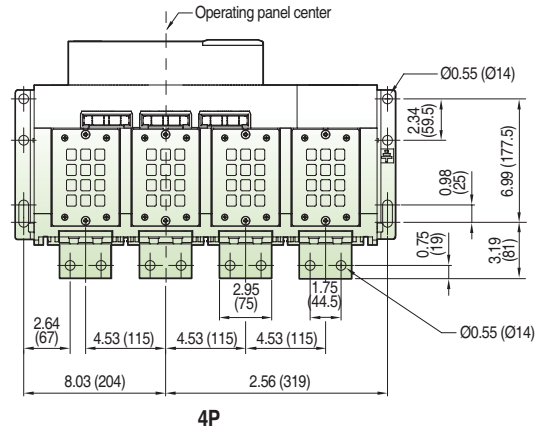
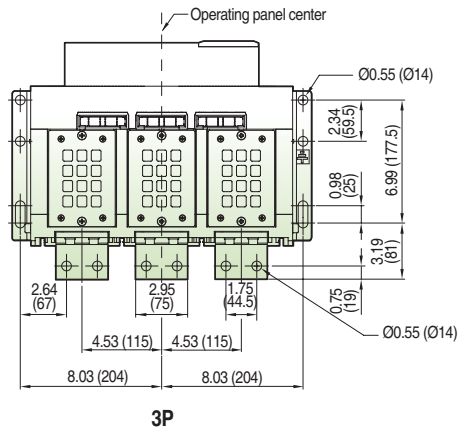


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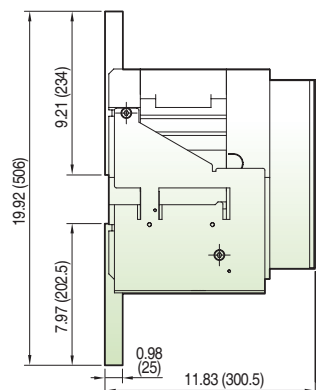
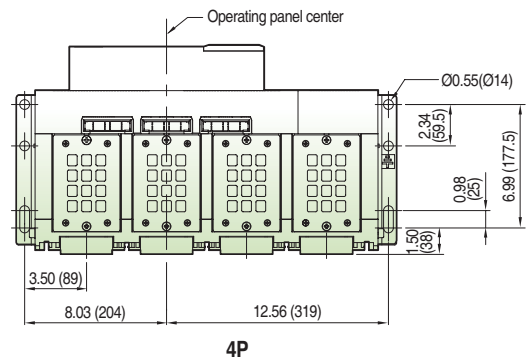
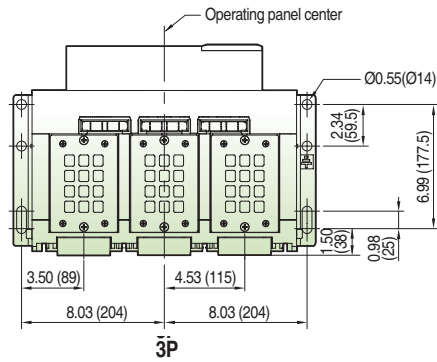
## Fixed type 800~2500A (UDA-08~25E)

[inch (mm)]

### Horizontal type



### Front connection type

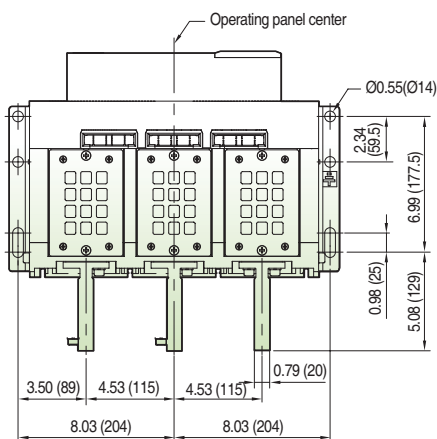




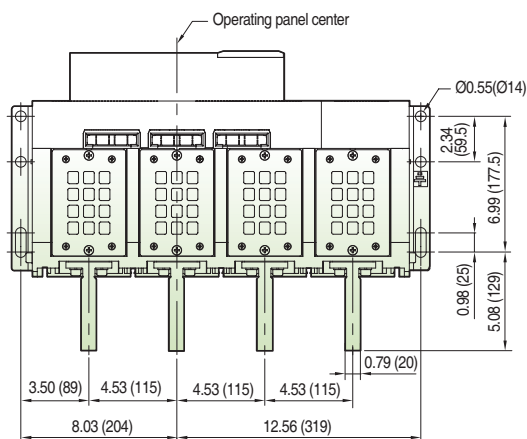
# Fixed type 3200A (UDA-32E)

[inch (mm)]

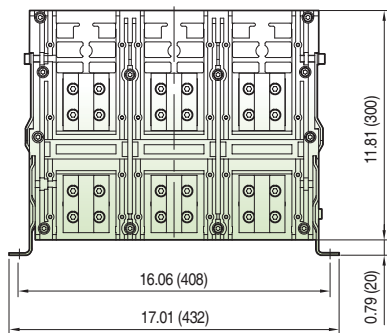
## Vertical type



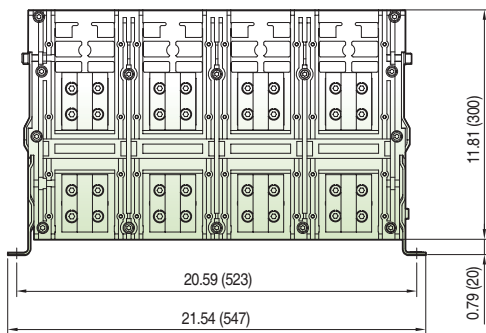
3P



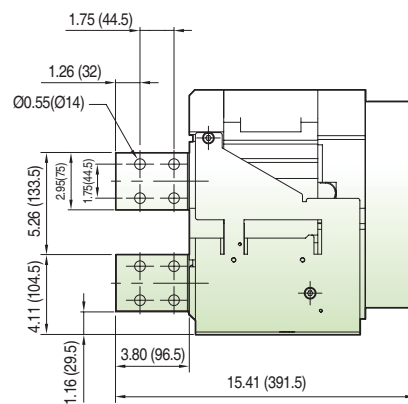
4P



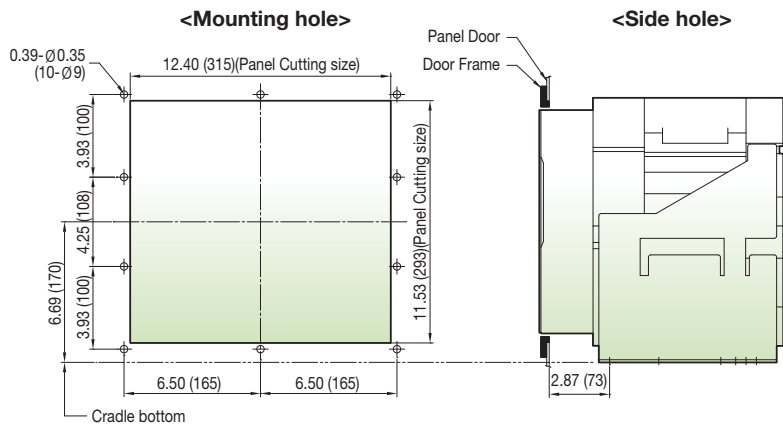
3P



4P



## Panel front door

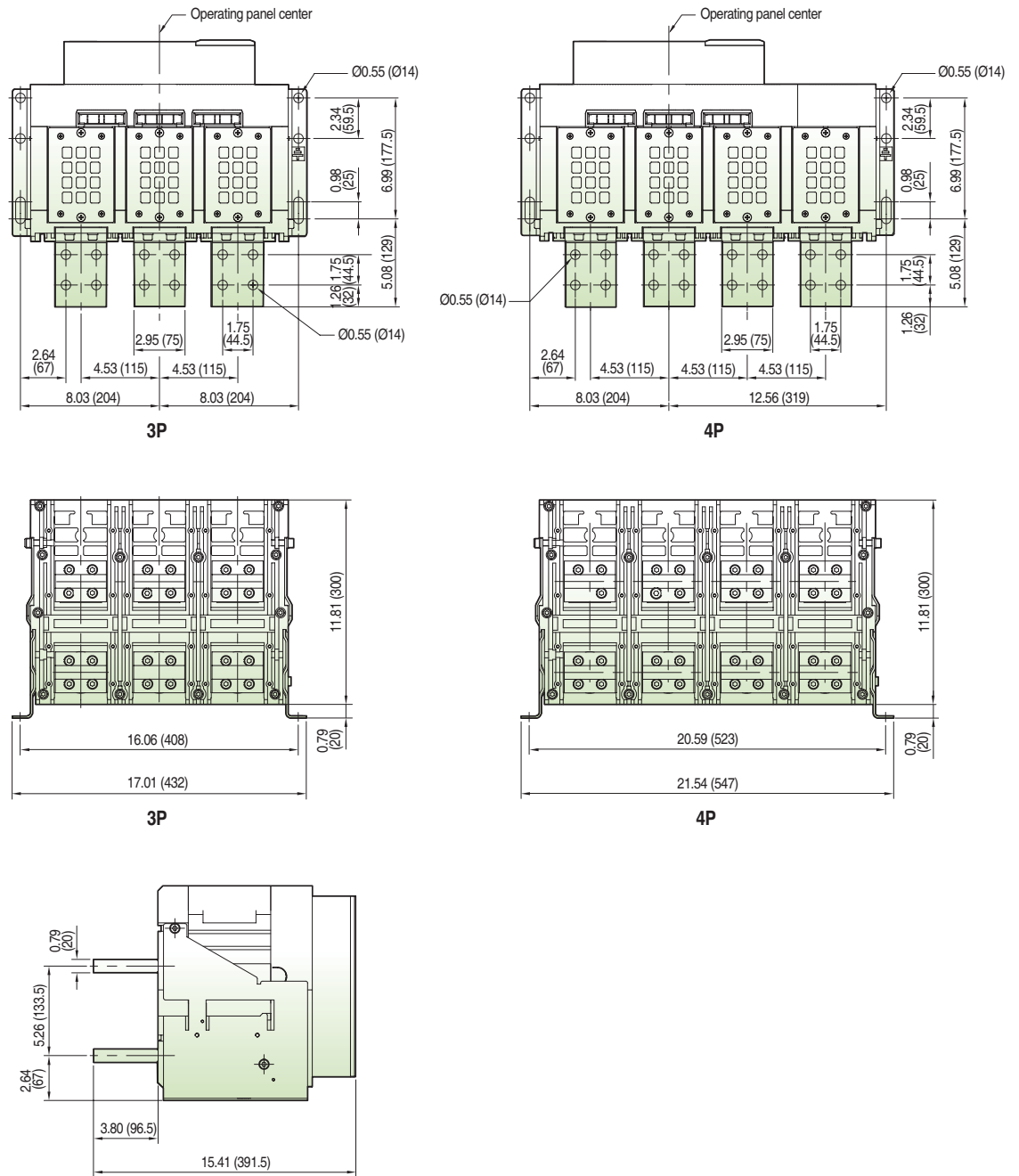


# Dimensions

## Fixed type 3200A (UDA-32E)

[inch (mm)]

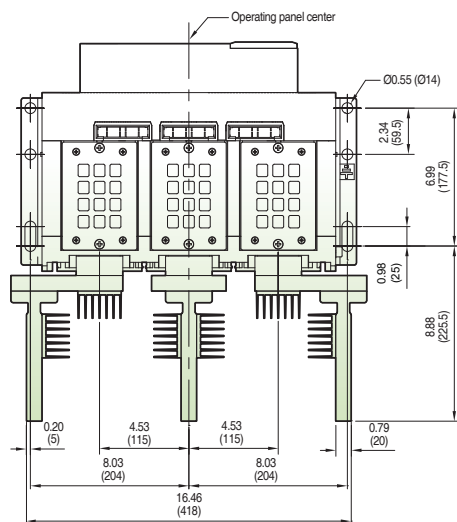
### Horizontal type



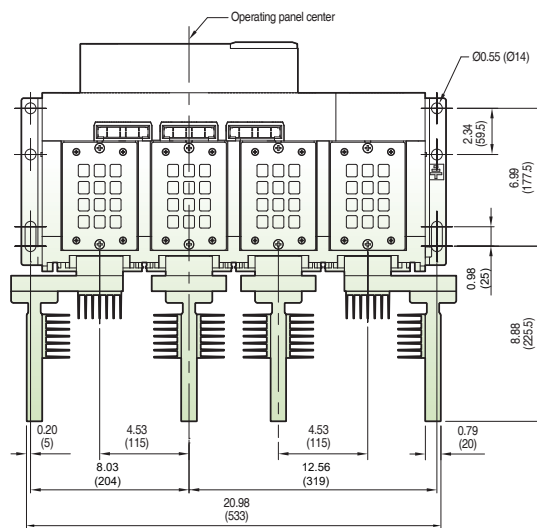
# Fixed type 4000A (UDA-40E)

[inch (mm)]

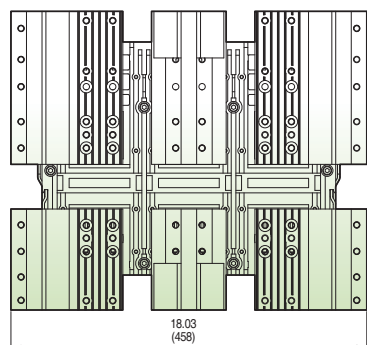
## Vertical type



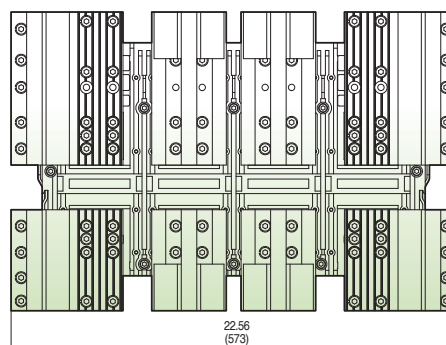
3P



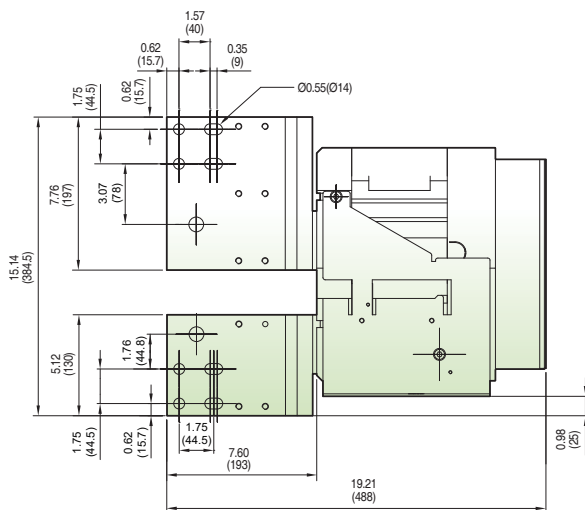
4P



3P



4P

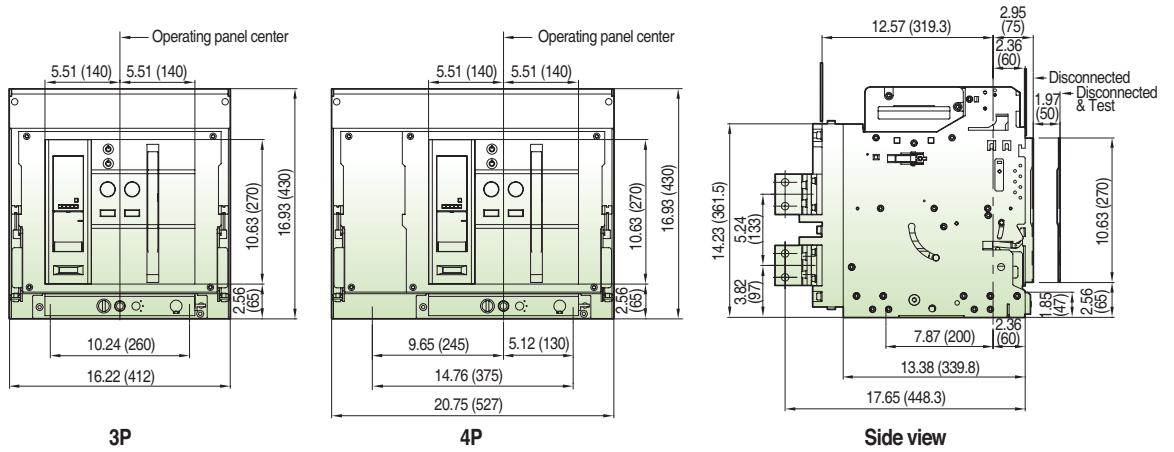


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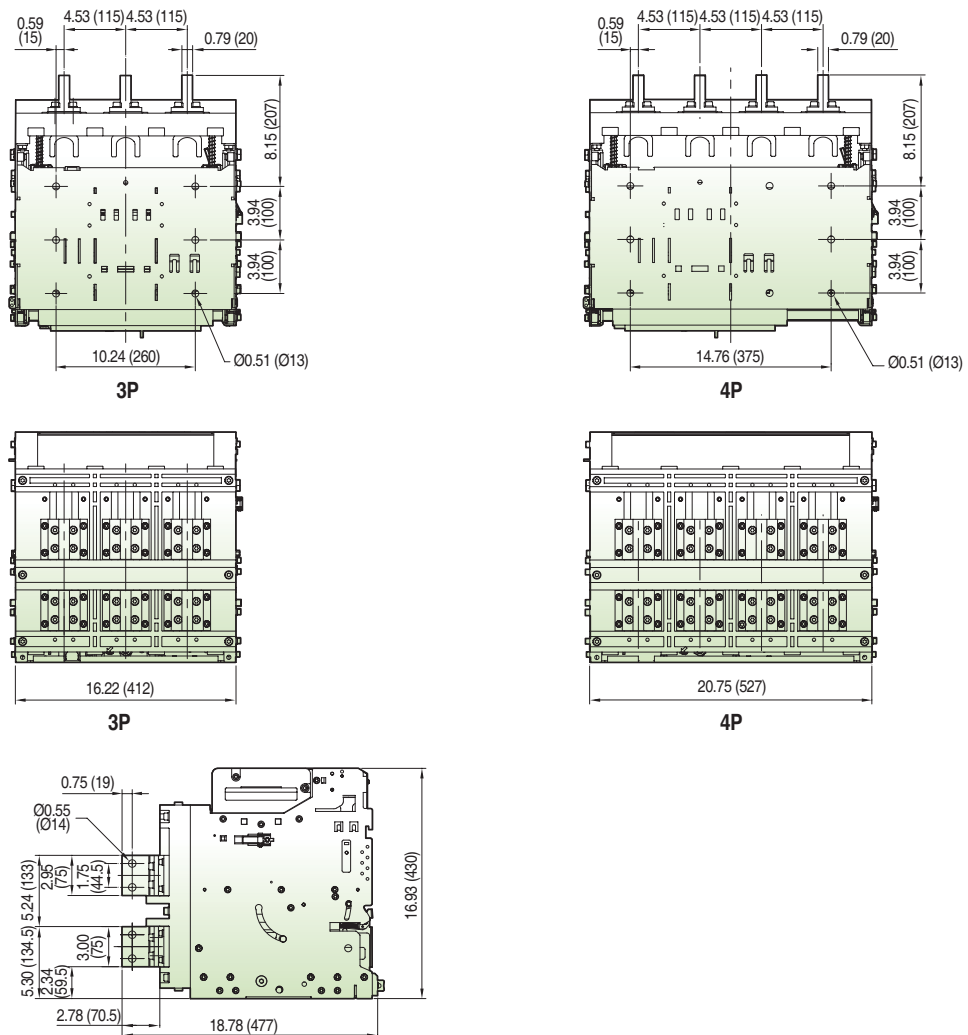
## Draw-out type 800~2500A (UDA-08~25E)

[inch (mm)]

### Front view

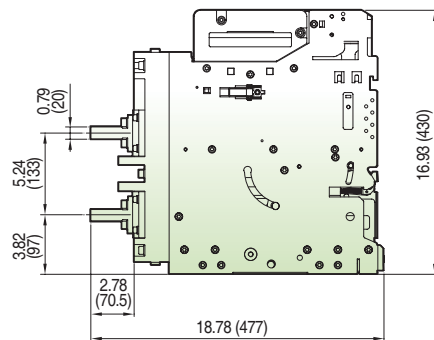
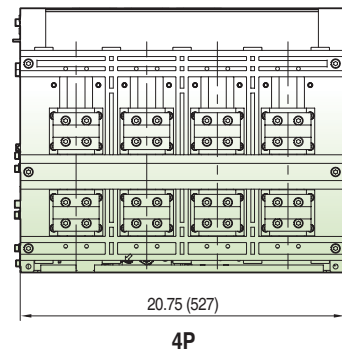
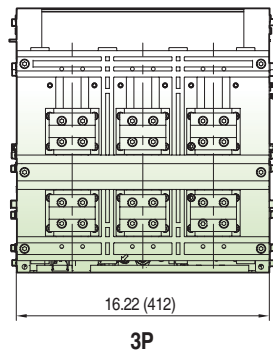
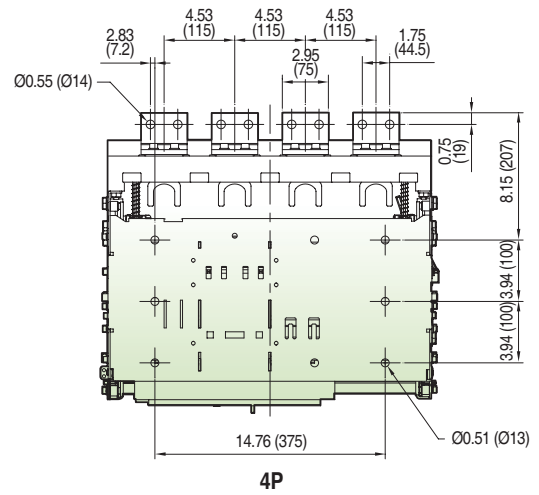
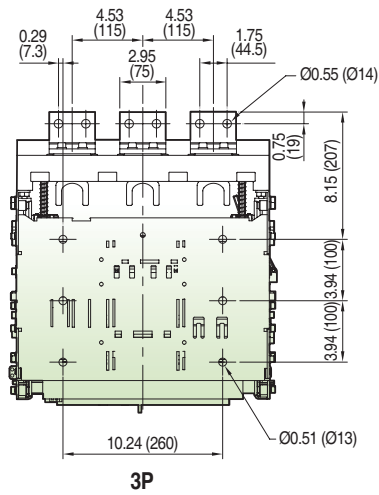


### Vertical type



[inch (mm)]

Horizontal type

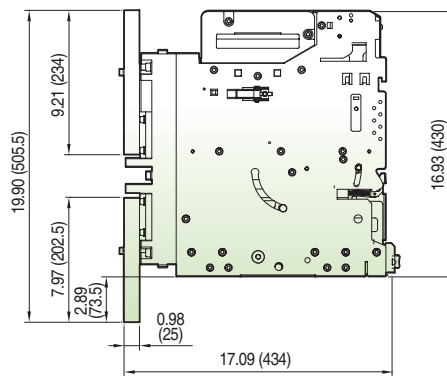
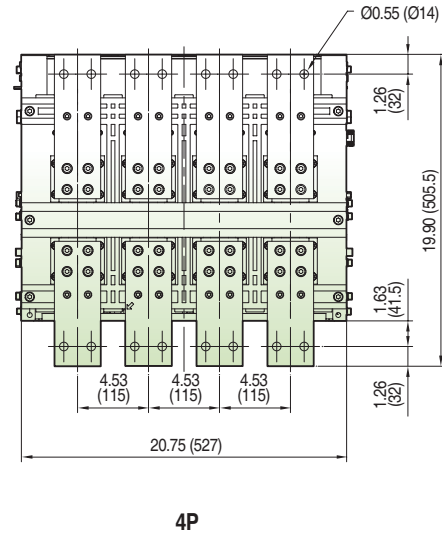
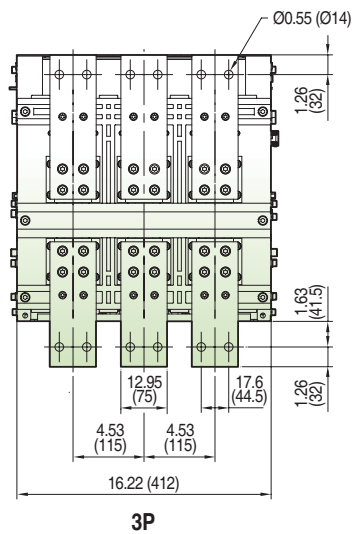
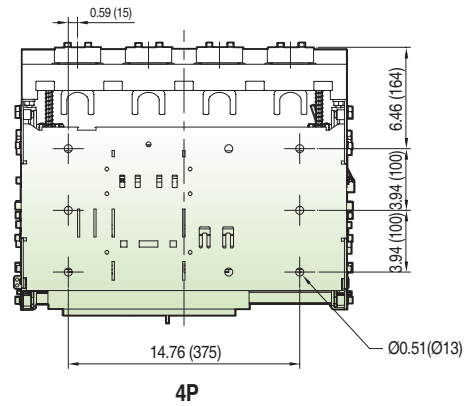
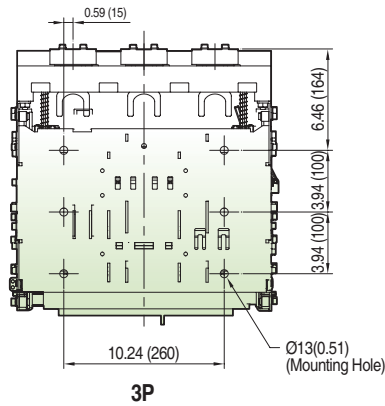


# Dimensions

## Draw-out type 800~2500A (UDA-08~25E)

[inch (mm)]

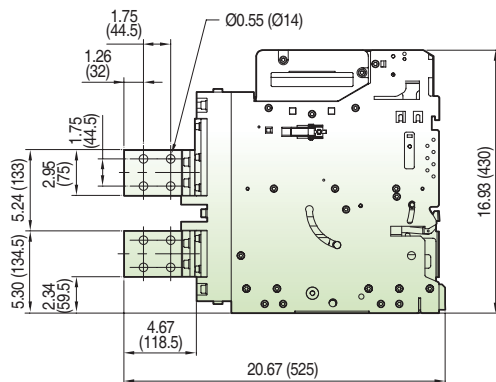
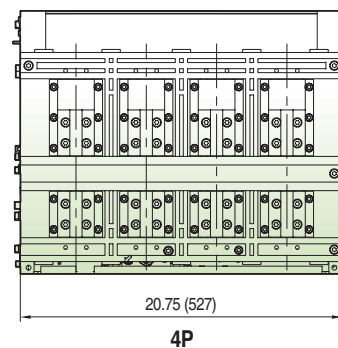
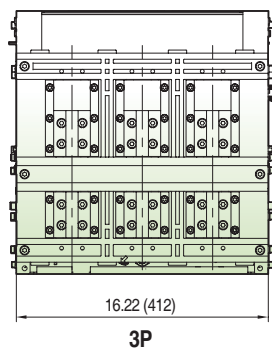
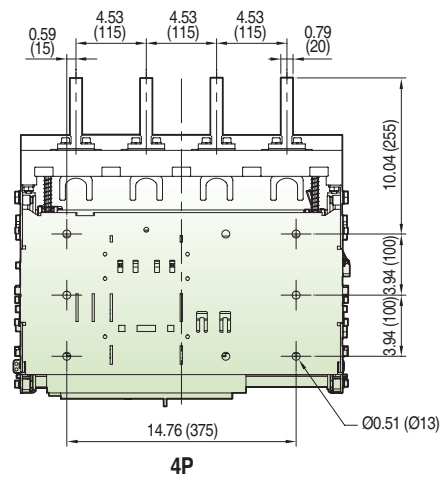
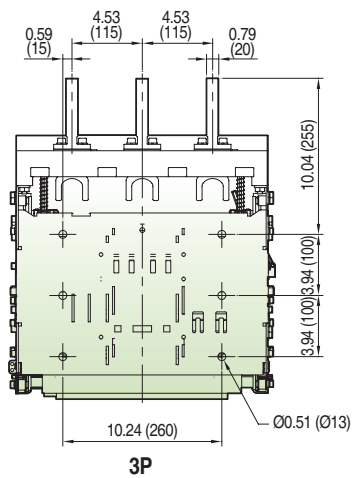
Front  
connection  
type



## Draw-out type 3200A (UDA-32E)

[inch (mm)]

### Vertical type

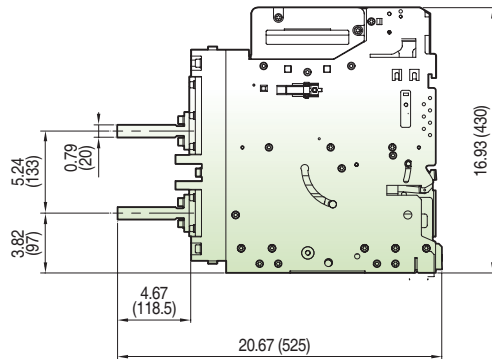
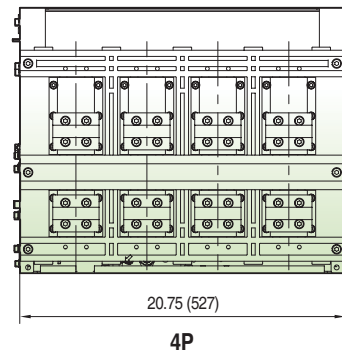
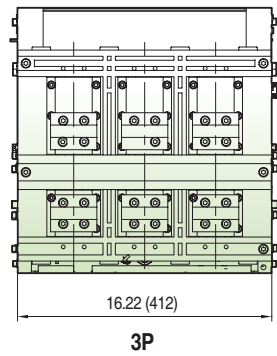
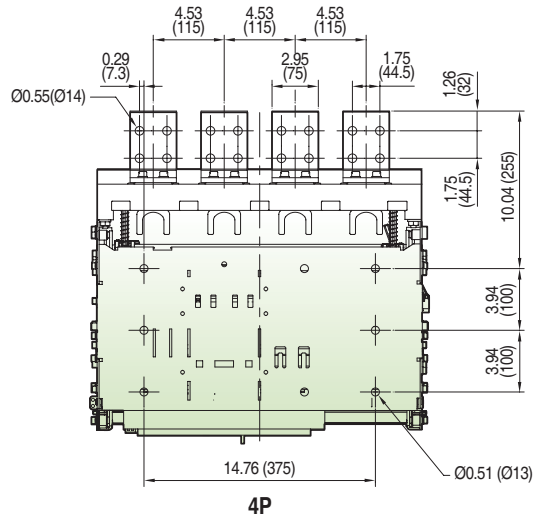
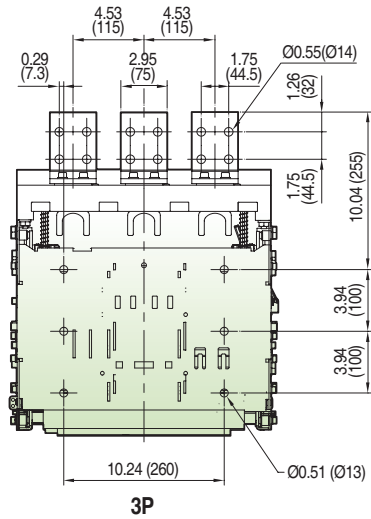


# Dimensions

## Draw-out type 3200A (UDA-32E)

[inch (mm)]

### Horizontal type

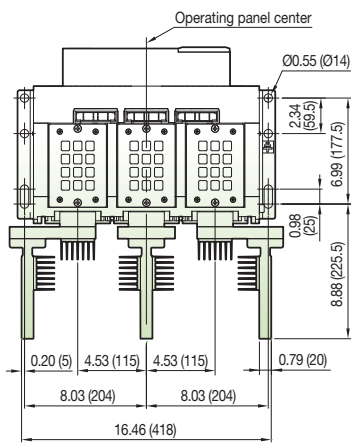




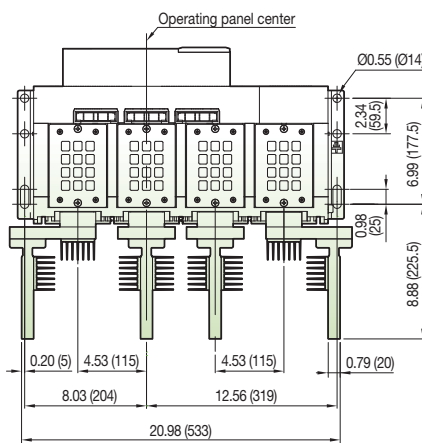
# Fixed type 4000A (UDA-40E)

[inch (mm)]

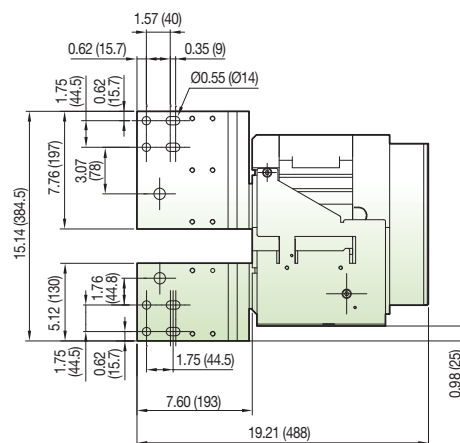
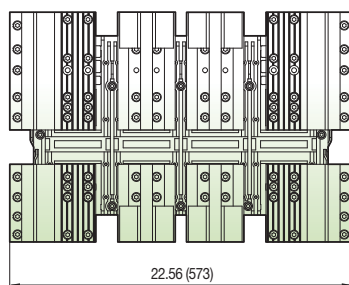
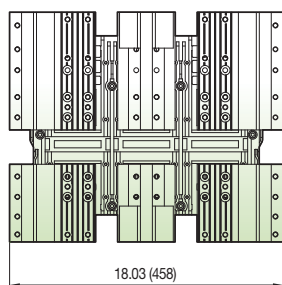
## Vertical type



3P

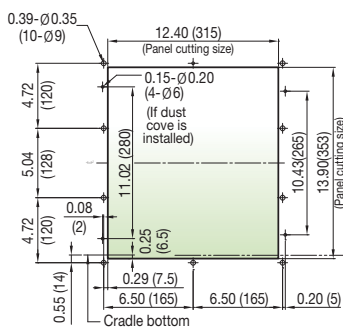


4P

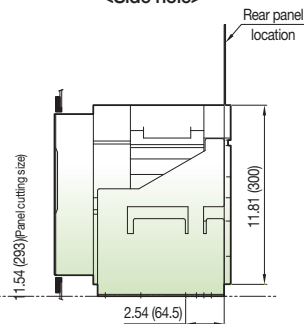


## Panel front door

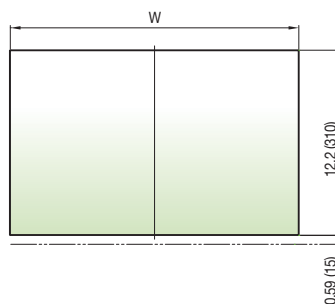
<Mounting hole>



<Side hole>



<Panel cutting - Except P-type>



|    | DIM "W"     |
|----|-------------|
| E3 | 15.28 (388) |
| E4 | 19.8 (503)  |

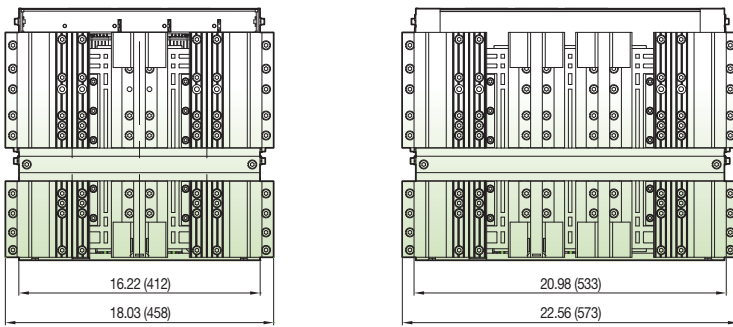
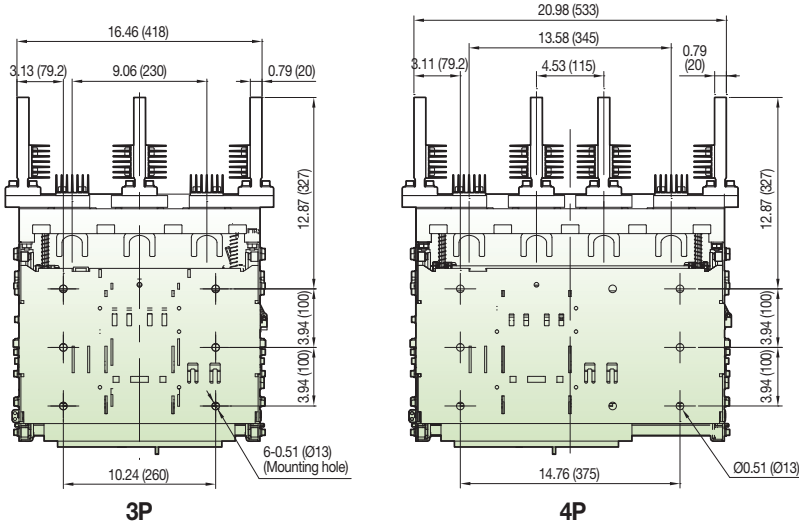
Note) For 4000AF, be aware of the distance between the terminals and any grounded metal.  
(Through air : over 1/2 inch (12.7mm), Over surface : over 1inch (25.4mm))

# Dimensions

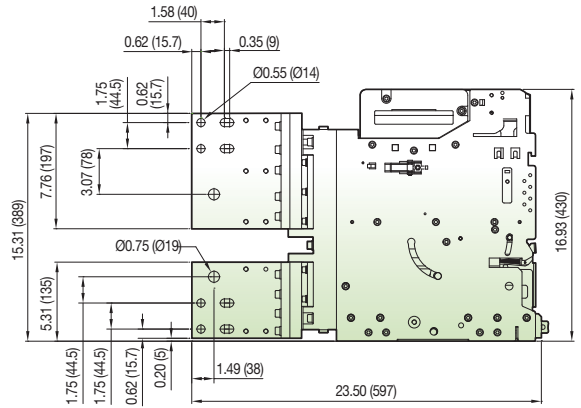
## Draw-out type 4000A (UDA-40E)

[inch (mm)]

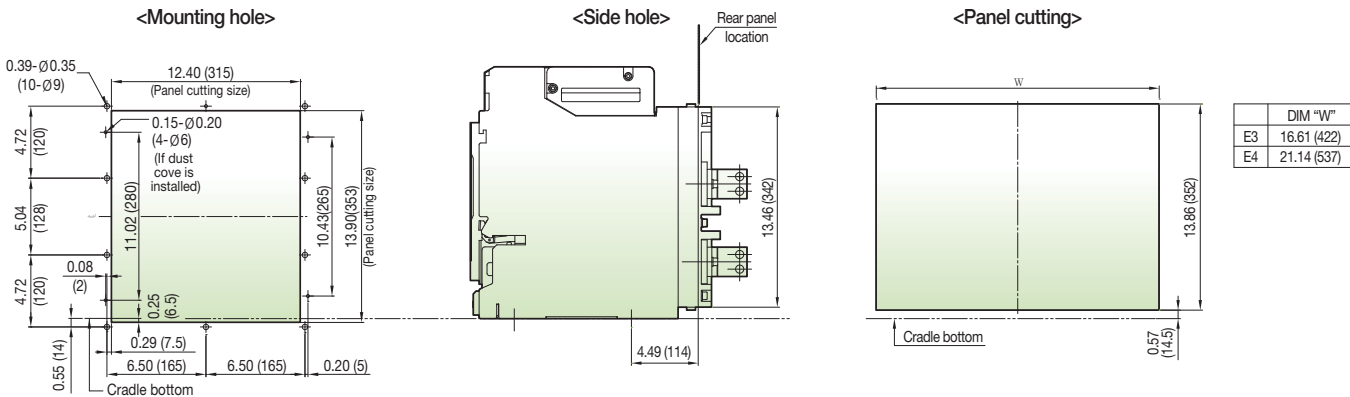
### Vertical type



### Side view





### Panel front door



Note) For 4000AF, be aware of the distance between the terminals and any grounded metal.  
(Through air : over 1/2 inch (12.7mm), Over surface : over 1inch (25.4mm))

## Temperature derating

The table below indicates the maximum current rating, for each connection type, as a function of the ambient temperature around the circuit breaker and the busbars. For ambient temperatures greater than 60°C, consult us.

| Product model | Rated current | Applicable busbar size (mm)              |  |              |              |              |              |              |              |  |       |              |              |              |              |              |              |              |
|---------------|---------------|--|---|--------------|--------------|--------------|--------------|--------------|--------------|---|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|               |               |  | Horizontal type   |              |              |              |              |              |              | Vertical type   |       |              |              |              |              |              |              |              |
|               |               |  | 40°C  | 45°C         | 50°C         | 55°C         | 60°C         | 65°C         | 70°C         | 40°C  | 45°C  | 50°C         | 55°C         | 60°C         | 65°C         | 70°C         |              |              |
| UDA-20D       | 800A          | 6.35T×76.2×1ea<br>(inch: 1/4×3×1ea)      | 800A  | 800A         | 800A         | 800A         | 800A         | 800A         | 800A         | 800A  | 800A  | 800A         | 800A         | 800A         | 800A         | 800A         |              |              |
|               |               | 5T×100×1ea                               | 800A  | 800A         | 800A         | 800A         | 800A         | 800A         | 800A         | 800A  | 800A  | 800A         | 800A         | 800A         | 800A         | 800A         |              |              |
|               |               | 6T×80×1ea                                | 800A  | 800A         | 800A         | 800A         | 800A         | 800A         | 800A         | 800A  | 800A  | 800A         | 800A         | 800A         | 800A         | 800A         |              |              |
|               | 1000A         | 6.35T×50.8×2ea<br>(Inch: 1/4×2×2ea)      | 1000A   | 1000A        | 1000A        | 1000A        | 1000A        | <b>690A</b>  | <b>912A</b>  | 1000A   | 1000A | 1000A        | 1000A        | 1000A        | 1000A        | 1000A        |              |              |
|               |               | 6T×50×2ea                                | 1000A   | 1000A        | 1000A        | 1000A        | 1000A        | <b>690A</b>  | <b>912A</b>  | 1000A   | 1000A | 1000A        | 1000A        | 1000A        | 1000A        | 1000A        |              |              |
|               | 1250A         | 6.35T×57.2×2ea<br>(Inch: 1/4×2' 1/4×2ea) | 1250A   | 1250A        | <b>1188A</b> | <b>1165A</b> | <b>1110A</b> | <b>1063A</b> | <b>1013A</b> | 1250A   | 1250A | 1250A        | 1250A        | 1250A        | 1250A        | 1250A        |              |              |
|               |               | 10T×100×1ea                              | 1250A   | 1250A        | <b>1188A</b> | <b>1165A</b> | <b>1110A</b> | <b>1063A</b> | <b>1013A</b> | 1250A   | 1250A | 1250A        | 1250A        | 1250A        | 1250A        | 1250A        |              |              |
|               | 1600A         | 6.35T×76.2×2ea<br>(Inch: 1/4×3×2ea)      | 1600A   | <b>1600A</b> | <b>1493A</b> | <b>1432A</b> | <b>1368A</b> | <b>1310A</b> | <b>1250A</b> | 1600A   | 1600A | 1600A        | 1600A        | <b>1552A</b> | <b>1488A</b> | <b>1424A</b> |              |              |
|               |               | 10T×100×1ea                              | 1600A   | <b>1600A</b> | <b>1493A</b> | <b>1432A</b> | <b>1368A</b> | <b>1310A</b> | <b>1250A</b> | 1600A   | 1600A | 1600A        | 1600A        | <b>1552A</b> | <b>1488A</b> | <b>1424A</b> |              |              |
|               | 2000A         | 6.35T×101.6×2ea<br>(inch: 1/4×4×2ea)     | 2000A   | <b>2000A</b> | <b>1866A</b> | <b>1790A</b> | <b>1710A</b> | <b>1638A</b> | <b>1562A</b> | 2000A   | 2000A | <b>1968A</b> | <b>1904A</b> | <b>1840A</b> | <b>1762A</b> | <b>1680A</b> |              |              |
|               |               | 5T×125×2ea                               | 2000A   | <b>2000A</b> | <b>1866A</b> | <b>1790A</b> | <b>1710A</b> | <b>1638A</b> | <b>1562A</b> | 2000A   | 2000A | <b>1968A</b> | <b>1904A</b> | <b>1840A</b> | <b>1762A</b> | <b>1680A</b> |              |              |
|               |               | 8T×80×2ea                                | 2000A   | <b>2000A</b> | <b>1866A</b> | <b>1790A</b> | <b>1710A</b> | <b>1638A</b> | <b>1562A</b> | 2000A   | 2000A | <b>1968A</b> | <b>1904A</b> | <b>1840A</b> | <b>1762A</b> | <b>1680A</b> |              |              |
| UDA-25D       | 2500A         | 6.35T×127×2ea<br>(Inch: 1/4×5×2ea)       | -   | -            | -            | -            | -            | -            | -            | -   | 2500A | 2500A        | <b>2460A</b> | <b>2380A</b> | <b>2300A</b> | <b>2203A</b> | <b>2100A</b> |              |
|               |               | 8T×100×2ea                               | -   | -            | -            | -            | -            | -            | -            | -   | 2500A | 2500A        | <b>2460A</b> | <b>2380A</b> | <b>2300A</b> | <b>2203A</b> | <b>2100A</b> |              |
|               |               | 5T×100×3ea                               | -   | -            | -            | -            | -            | -            | -            | -   | -     | -            | -            | -            | -            | -            | -            | -            |
|               |               | 10T×80×2ea                               | -   | -            | -            | -            | -            | -            | -            | -   | -     | -            | -            | -            | -            | -            | -            | -            |
| UDA-25E       | 800A          | 6.35T×76.2×1ea<br>(inch: 1/4×3×1ea)      | 800A  | 800A         | 800A         | 800A         | 800A         | 800A         | 800A         | 800A  | 800A  | 800A         | 800A         | 800A         | 800A         | 800A         |              |              |
|               |               | 5T×100×1ea                               | 800A  | 800A         | 800A         | 800A         | 800A         | 800A         | 800A         | 800A  | 800A  | 800A         | 800A         | 800A         | 800A         | 800A         |              |              |
|               |               | 6T×80×1ea                                | 800A  | 800A         | 800A         | 800A         | 800A         | 800A         | 800A         | 800A  | 800A  | 800A         | 800A         | 800A         | 800A         | 800A         |              |              |
|               | 1600A         | 6.35T×76.2×2ea<br>(inch: 1/4×3×2ea)      | 1600A   | 1600A        | 1600A        | 1600A        | 1600A        | 1600A        | 1600A        | 1600A   | 1600A | 1600A        | 1600A        | 1600A        | 1600A        | 1600A        |              |              |
|               |               | 10T×100×1ea                              | 1600A   | 1600A        | 1600A        | 1600A        | 1600A        | 1600A        | 1600A        | 1600A   | 1600A | 1600A        | 1600A        | 1600A        | 1600A        | 1600A        |              |              |
|               | 2000A         | 6.35T×101.6×2ea<br>(inch: 1/4×4×2ea)     | -   | -            | -            | -            | -            | -            | -            | -   | 2000A | 2000A        | 2000A        | 2000A        | 2000A        | <b>2000A</b> | <b>1871A</b> |              |
|               |               | 5T×125×2ea                               | -   | -            | -            | -            | -            | -            | -            | -   | 2000A | 2000A        | 2000A        | 2000A        | 2000A        | <b>2000A</b> | <b>1871A</b> |              |
|               | 2500A         | 8T×80×2ea                                | 2000A   | 2000A        | 2000A        | 2000A        | 2000A        | 1886A        | 1764A        | -   | -     | -            | -            | -            | -            | -            | -            |              |
|               |               | 6.35T×127×2ea<br>(inch: 1/4×5×2ea)       | -   | -            | -            | -            | -            | -            | -            | -   | 2500A | 2500A        | 2500A        | 2500A        | <b>2400A</b> | <b>2263A</b> | <b>2117A</b> |              |
|               |               | 8T×100×2ea                               | 2500A   | 2500A        | 2500A        | <b>2400A</b> | <b>2300A</b> | <b>2168A</b> | <b>2028A</b> | -   | -     | -            | -            | -            | -            | -            | -            |              |
|               | UDA-32E       | 3200A                                    | 6.35T×127×3ea<br>(inch: 1/4×5×3ea)  | -            | -            | -            | -            | -            | -            | -   | -     | 3200A        | 3200A        | 3200A        | <b>3120A</b> | <b>3050A</b> | <b>2876A</b> | <b>2690A</b> |
|               |               |  | 10T×125×2ea   | -            | -            | -            | -            | -            | -            | -   | -     | 3200A        | 3200A        | 3200A        | <b>3120A</b> | <b>3050A</b> | <b>2876A</b> | <b>2690A</b> |
| 10T×80×3ea    |               |  | -   | -            | -            | -            | -            | -            | -            | -   | -     | -            | -            | -            | -            | -            | -            |              |
| UDA-40E       | 4000A         | 8T×100×3ea                               | 3200A   | 3200A        | <b>3100A</b> | <b>3000A</b> | <b>2900A</b> | <b>2734A</b> | <b>2557A</b> | -   | -     | -            | -            | -            | -            | -            |              |              |
|               |               | 6.35T×127×4ea<br>(inch: 1/4×5×4ea)       | -   | -            | -            | -            | -            | -            | -            | -   | 4000A | 4000A        | 4000A        | <b>3950A</b> | <b>3800A</b> | <b>3583A</b> | <b>3351A</b> |              |
|               |               | 10T×125×3ea                              | -   | -            | -            | -            | -            | -            | -            | -   | -     | -            | -            | -            | -            | -            |              |              |

\* Ambient temperature is greater than 60°C, consult us. \* Current values greater than 60°C are based on ANSI standard.  
 \* Total temperature limit is 105°C according to UL standard.

# Technical information

## Internal resistance and power consumption

| Type    | Pole | Rated current (A) | Fixed type      |                       | Draw-out type   |                       |
|---------|------|-------------------|-----------------|-----------------------|-----------------|-----------------------|
|         |      |                   | Resistance (mΩ) | Power dissipation (W) | Resistance (mΩ) | Power dissipation (W) |
| UDA-20D | 3P   | 800               | 0.081           | 52                    | 0.104           | 67                    |
|         |      | 1,000             | 0.081           | 81                    | 0.104           | 104                   |
|         |      | 1,250             | 0.081           | 127                   | 0.104           | 163                   |
|         |      | 1,600             | 0.081           | 207                   | 0.104           | 266                   |
|         |      | 2,000             | 0.081           | 324                   | 0.104           | 416                   |
| UDA-25D |      | 2,500             | 0.070           | 438                   | 0.093           | 581                   |
| UDA-20D | 4P   | 800               | 0.110           | 70                    | 0.140           | 90                    |
|         |      | 1,000             | 0.110           | 110                   | 0.140           | 140                   |
|         |      | 1,250             | 0.110           | 172                   | 0.140           | 219                   |
|         |      | 1,600             | 0.110           | 282                   | 0.140           | 358                   |
|         |      | 2,000             | 0.110           | 440                   | 0.140           | 560                   |
| UDA-25D |      | 2,500             | 0.100           | 625                   | 0.130           | 813                   |
| UDA-25E | 3P   | 800               | 0.031           | 20                    | 0.061           | 39                    |
|         |      | 1,600             | 0.031           | 79                    | 0.061           | 156                   |
|         |      | 2,000             | 0.031           | 124                   | 0.061           | 244                   |
|         |      | 2,500             | 0.031           | 194                   | 0.061           | 381                   |
| UDA-32E |      | 3,200             | 0.028           | 287                   | 0.046           | 471                   |
| UDA-40E |      | 4,000             | 0.025           | 400                   | 0.040           | 640                   |
| UDA-25E | 4P   | 800               | 0.042           | 27                    | 0.082           | 52                    |
|         |      | 1,600             | 0.042           | 108                   | 0.082           | 210                   |
|         |      | 2,000             | 0.042           | 168                   | 0.082           | 328                   |
|         |      | 2,500             | 0.042           | 263                   | 0.082           | 513                   |
|         |      | UDA-32E           |                 | 3,200                 | 0.038           | 389                   |
| UDA-40E |      | 4,000             | 0.034           | 544                   | 0.054           | 864                   |

Note) 1. Power dissipation is the value measured at each rated current for 3pole or 4pole breaker.  
2. Resistance is the value measured across the terminals of connecting all poles in series.

## Operating conditions

### Ambient temperature

DC Products can operate under the following temperature conditions

- The electrical and mechanical characteristics are stipulated for an ambient temperature of -5°C to +40°C
- The average temperature should be within + 35°C
- Reduce the continuous conducting current when the temperature is over 45°C (refer to temperature derating)
- Storage condition: -20°C to + 60°C is recommended.

### Altitude

DC Products is designed for operation at altitudes under 2000m.

At altitudes higher than 2000m, change the ratings upon a service condition.

| Item                          | Altitude [m] |           |           |           |
|-------------------------------|--------------|-----------|-----------|-----------|
|                               | 2000         | 3000      | 4000      | 5000      |
| Maximum rated voltage         | 1500 Vdc     | 1350 Vdc  | 1200 Vdc  | 1050 Vdc  |
|                               | 1000 Vdc     | 900 Vdc   | 800 Vdc   | 700 Vdc   |
|                               | 750 Vdc      | 675 Vdc   | 600 Vdc   | 525 Vdc   |
| Current compensation constant | 1 × In       | 0.98 × In | 0.96 × In | 0.94 × In |

### Environment

Under clean air; Maximum temperature + 40°C (relative humidity should be under 85%)

Maximum temperature + 20°C (relative humidity should be under 90%)

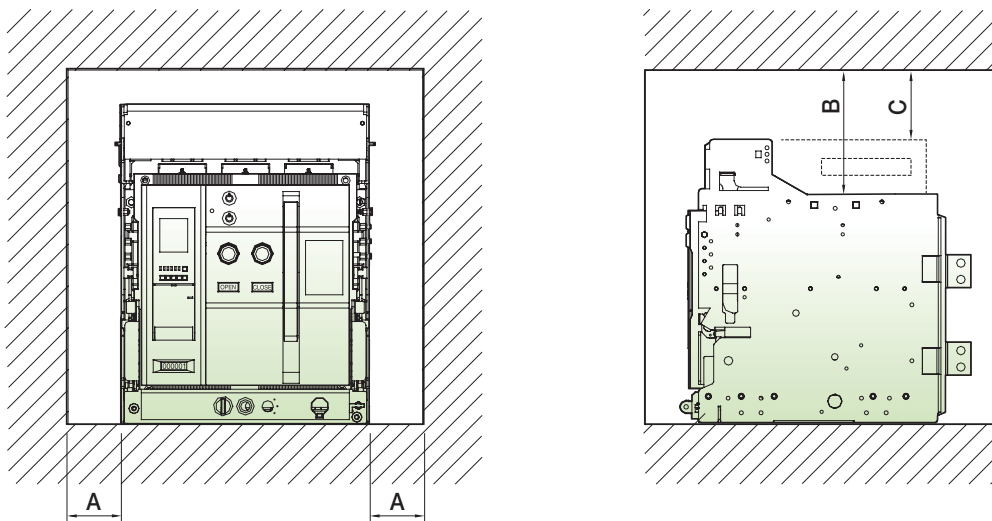
Do not apply under corrosive or ammonia gas circumstances (H<sub>2</sub>S ≤ 0.01ppm, SO<sub>2</sub> ≤ 0.01ppm, NH<sub>3</sub> ≤ a few ppm)

### Extreme atmosphere conditions:

Under high temperature and/or high humidity, the insulation durability, electrical and mechanical features could be deteriorated. At this conditions, increasing corrosion-resistant dealing needs. Corrosion-resistant parts need under this conditions.

## Install recommendation

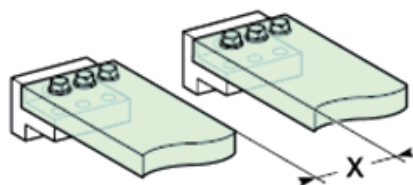
### Insulation clearance



| Type    | A  | B   | C   |
|---------|----|-----|-----|
| Fixed   | 50 | 150 | N/A |
| Drawout | 5  | N/A | 0   |

### Minimum spacing

The dimension of all charging parts should be over the minimum spacing.



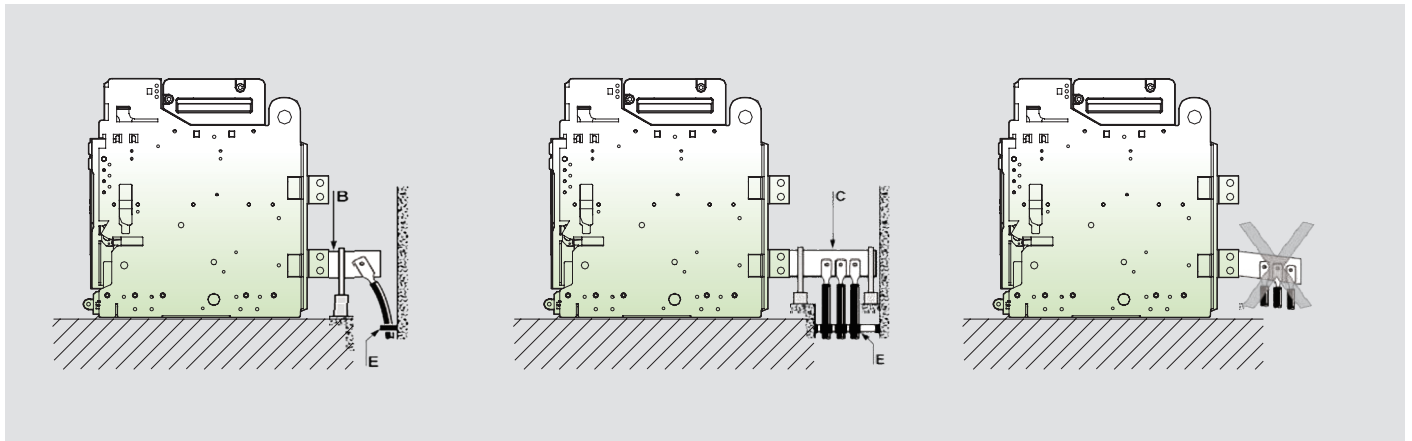
| Voltage between parts       | Minimum spacing at terminals (through air) |  |
|-----------------------------|--|--|
|                             | Between terminals of opposite polarity (X) | Between terminals and any grounded metal |
| 131 ~ 300V                  | 19.1mm                                     | 12.7mm                                   |
| 301 ~ 1000V<br>(or 1500Vdc) | 25.4mm                                     | 12.7mm                                   |

# Technical information

## BUS-BAR Connection

### Cables connections

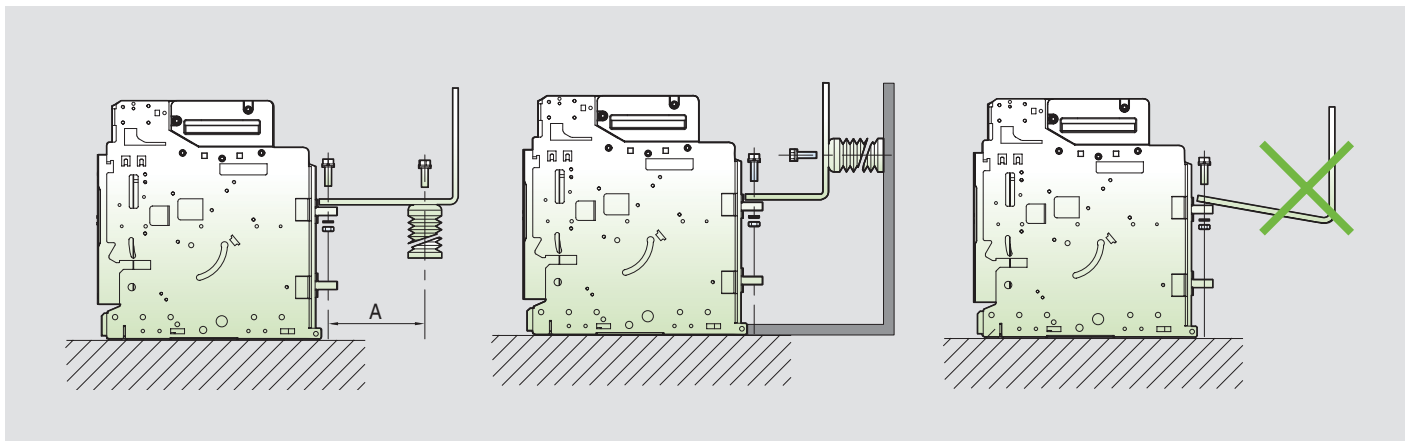
Make sure that no excessive mechanical force put on the rear terminals for cable connection. Extension terminal is fixed such as B, C and cable is to fixed to the frame such as E



### Bus-bar connection

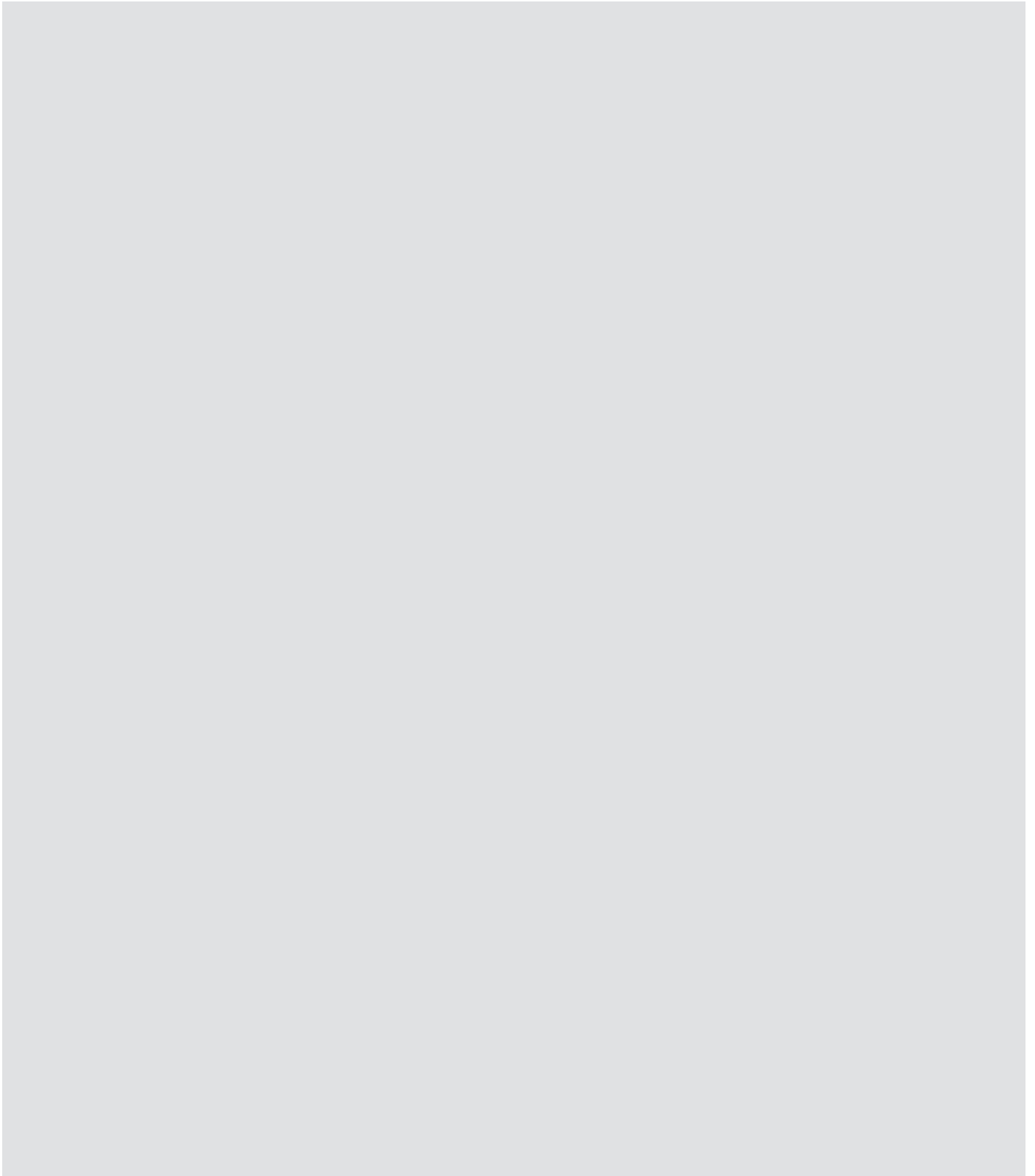
For busbar connection, connect access parts with a provided torque and fix with parallel installing the support not to apply terminal weight to circuit breaker.

In order to prevent the spread safety or secondary accidents, secure maximum safe distance A (Table 1) from the access area to withstand the electrical force during the short circuit faults.



(Table 1) Maximum safe distance A

| Short capacity (kA) | 30  | 50  | 65  | 80  | 100 | 150 |
|---------------------|-----|-----|-----|-----|-----|-----|
| Length A (mm)       | 350 | 300 | 250 | 150 | 150 | 150 |





### 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.



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