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2020

**Susol** Super Solution

# UL 1500VDC MCCB



**LS** ELECTRIC

# Characteristics and Rating

## Characteristics

- Used for applications such as photovoltaic (PV) power generation, UPS and data center.
- Features compact size with breaking capacity from 20 to 65kA.
- Maximum breaking capacity
- Nominal voltage ranges up to 1500Vdc
- Rated current and No. of poles
  - UL489 - 60~550A
  - UL489B - 40~450A
- Standards: Acquisition of dual standards IEC/UL



## Rating

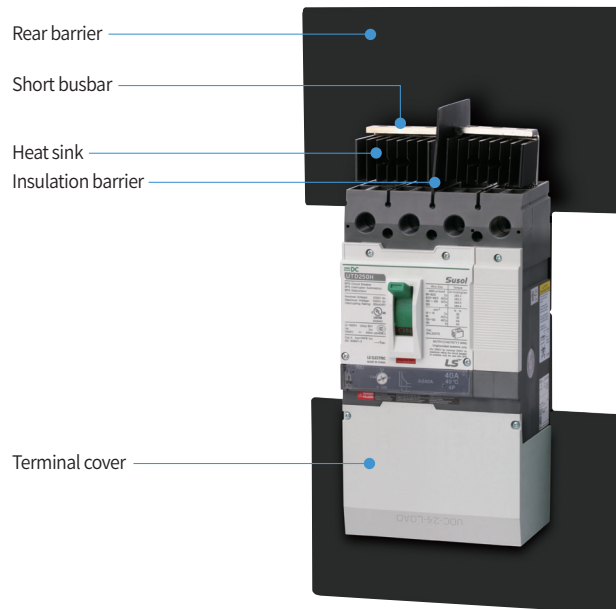
FRAME		UTD250			UTD400			UTD600		
Rated voltage		1500 Vdc			1500 Vdc			1500 Vdc		
Rated current	UL489 for BPS (40°C)	60, 80, 100, 150, 200, 250A			275, 300, 400A			450, 500, 550A		
	UL489B for PV (50°C)	40, 60, 80, 100, 150, 200A			250, 275A			300, 400, 450A		
Number of poles		4			4			4		
Breaker type		E	N	H	E	N	H	E	N	H
<b>UL489 for BPS/ UL489B for PV</b>		<b>UTD250</b>			<b>UTD400</b>			<b>UTD600</b>		
Interrupting Capacity(kA) UL, CSA		20	50	65	20	50	65	20	50	65
<b>IEC 60947-2</b>		<b>UTD250</b>			<b>UTD400</b>			<b>UTD600</b>		
Ultimate breaking capacity (kA) DC, Icu		20	40	50	20	40	50	20	40	50
Service breaking capacity (kA) DC, Ics	$\tau = 1\text{ms(Annex P)}$	20	40	50	20	40	50	20	40	50
	$\tau = 10\text{ms}$	20	20	20	20	20	20	20	20	20
Insulation voltage, Ui		1500 Vdc			1500 Vdc			1500 Vdc		
Impulse withstand voltage, Uimp		8 kV			8 kV			8 kV		
Utilization category		A			A			A		
<b>IEC 60947-3</b>		<b>UTD250</b>			<b>UTD400</b>			<b>UTD600</b>		
Insulation voltage, Ui		1500 Vdc			1500 Vdc			1500 Vdc		
Impulse withstand voltage, Uimp		8 kV			8 kV			8 kV		
Rated short-time withstand current (Icw)		3 kA			4 kA			5 kA		
Utilization category		DC23A, DC-PV2			DC23A, DC-PV2			DC23A, DC-PV2		
Trip unit		<b>UL489</b>	<b>UL489B</b>		<b>UL489</b>	<b>UL489B</b>		<b>UL489</b>	<b>UL489B</b>	
	FTU*	60~250A	40~200A		275~400A	250, 275A		450~550A	300~450A	
	FMU*	60~250A	60~200A		275~400A	275A		450, 550A	300~450A	
	MCS**	250A	200A		400A	275A		550A	450A	
	DSU***	250A			400A			550A		
Unit mounted		●			●			●		
Mechanical lugs		●			●			●		
Control wire terminal kit		●			●			●		
Motor operator		●			●			●		
Terminal shields		●			●			●		
Insulation barrier		●			●			●		
Shunt Trip		●			●			●		
Undervoltage trip		●			●			●		
Auxiliary switch		●			●			●		
Alarm switch		●			●			●		
Directly-Mounted rotary operating handle		●			●			●		
IEC-Door-Mounted operating mechanisms		●			●			●		
Padlock attachment		●			●			●		
Weight(approximate), lbs.(kg)		6.08(2.76)			15.41(6.99)			15.43(7)		
Dimension Inches(mm)		<b>W</b>	<b>H</b>	<b>D</b>	<b>W</b>	<b>H</b>	<b>D</b>	<b>W</b>	<b>H</b>	<b>D</b>
		5.51(140)	7.87(200)	3.62(92)	7.34(186.5)	11.42(290)	4.33(110)	7.34(186.5)	13.39(340)	4.33(110)

\* FTU, FMU: UL489, UL489B, IEC 60947-2

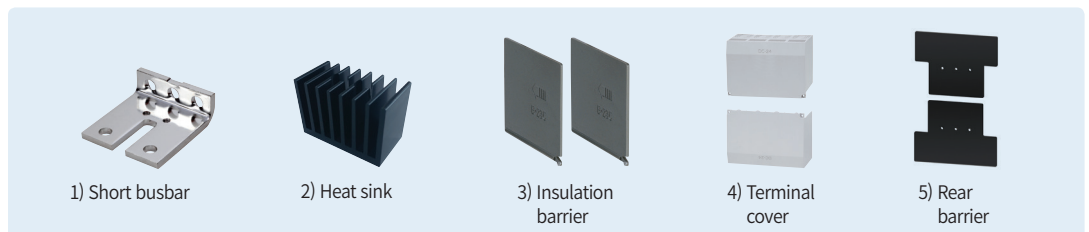
\*\* UL 489, UL 489B Only

\*\*\* IEC 60947-3 Only

## External configuration



## External accessories



## Quantity of Accessories that can be assembled on MCCB. (Accessories needs to be purchased separately.)

Accessory	Grounded System		Ungrounded System		Item code	Remarks
	Qty	Unit	Qty	Unit		
Short busbar	3	Set	2	Set	83261172113	For UTD250, 40~200A, Set of 1
					83261172112	For UTD250, 250A, Set of 1
					83261173650	For UTD400/600, 250~500A, Set of 1
					83261173651	For UTD400/600, 550A~600A, Set of 1
Insulation barrier	3	ea	4	ea	-	Included in Spare Part of MCCB or MCS package
Terminal cover (Line)	1	ea	1	ea	83261172111 83261173557	For UTD250 For UTD400/600
Terminal cover (Load)	1	ea	1	ea		
Rear barrier (1ea)	2	ea	2	ea		

Note) For 400A ungrounded system, order MCCB or MCS , 83261173650 x2 and 83261173557 x1

## Possible configuration of internal accessories.

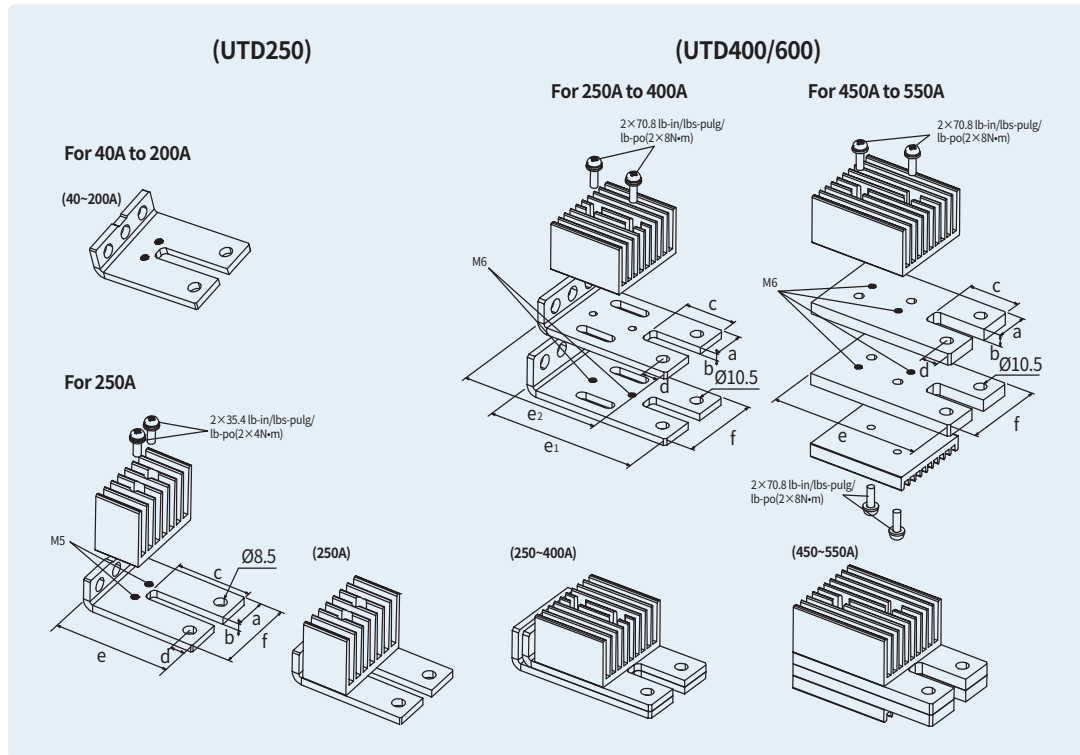
Frame	Internal Accessories Locations	Type	Left(R)	Right(T)
UTD250		AX	1	1
		AL	1	-
		SHT	1*	-
		UVT	1*	-
UTD400 UTD600		AX	3	-
		AL	-	1
		SHT	1*	-
		UVT	1*	-

\* Applicable in indicated pole position-not synchronous

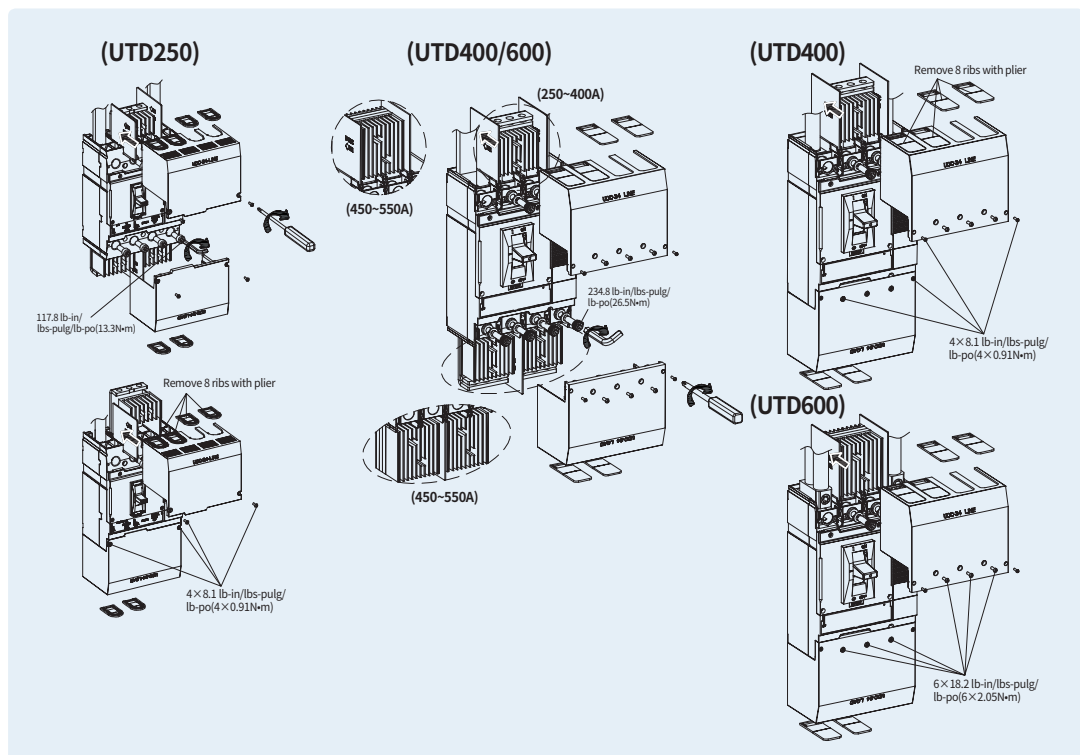
# Assembly and installation

## Short bus set

Dim.	Length		
	UTD250	UTD400	UTD600
a	0.98in (25mm)	1.22in (31mm)	1.22in (31mm)
b	0.2in (5mm)	0.24in (6mm)	0.39in (10mm)
c	2.05in (52mm)	1.81in (46mm)	1.81in (46mm)
d	0.39in (10mm)	0.55in (14mm)	0.55in (14mm)
e	3.19in (81mm)	5.28in (134mm) 4.88in (124mm)	5.28in (134mm)
f	2.36in (60mm)	3.07in (78mm)	3.07in (78mm)









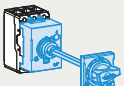

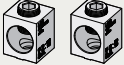


## Short bus installation



# Accessories order code

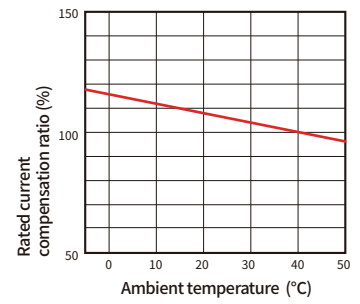
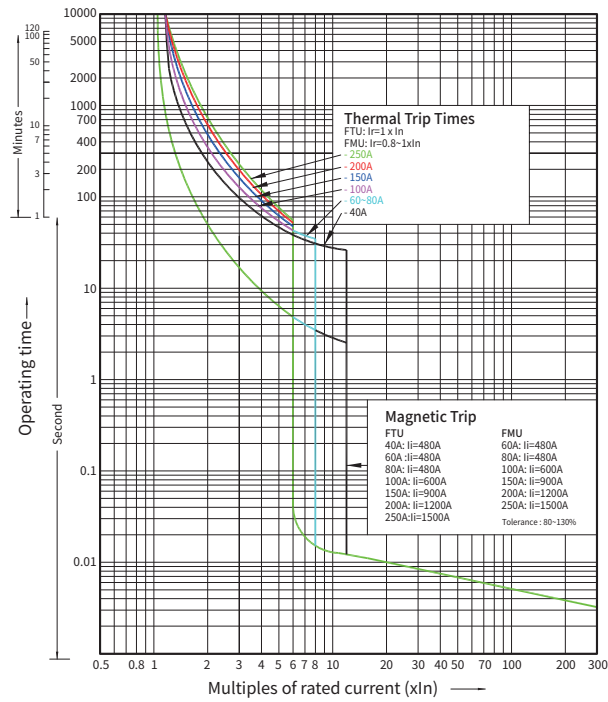
UL 1500VDC MCCB

Accessories		Order code	Part number	Applied MCCB
	Aux. contact	83011171301	AX	UTD250/400/600
	Alarm contact	83011171302	AL	UTD250/400/600
	Shunt trip	83211171331	SHT, DC12V	UTD250/400/600
		83211171332	SHT, AC/DC24V	UTD250/400/600
		83211171333	SHT, AC/DC48V	UTD250/400/600
		83211171334	SHT, AC/DC110~130V	UTD250/400/600
		83211171335	SHT, AC220~240V/DC250V	UTD250/400/600
		83211171336	SHT, AC380~500V	UTD250/400/600
	Under-Voltage release	83211171351	UVT, AC/DC24V	UTD250/400/600
		83211171352	UVT, AC/DC48V	UTD250/400/600
		83211171353	UVT, AC/DC110~130V	UTD250/400/600
		83211171354	UVT, AC220~240V/DC250V	UTD250/400/600
		83211171355	UVT, AC380~440V	UTD250/400/600
		83211171356	UVT, AC440~480V	UTD250/400/600
	Padlock	56771172301	PL2	UTD250
		56771173301	PL3	UTD400/600
	Palate handle lock	56771172303	PHL2	UTD250
		56771173303	PHL3	UTD400/600
	Direct handle w/o key lock	83111172311	DH2	UTD250
		83111173311	DH3	UTD400/600
	Direct handle w/ key lock	83111172312	DHK2	UTD250
		83111173312	DHK3	UTD400/600
	Door disconnect (Standard)	83111172309	REH-2, w/ 12inch shaft	UTD250
		83111173309	REH-3, w/ 12inch shaft	UTD400/600
		83111172310	REH-2, w/o shaft	UTD250
		83111173310	REH-3, w/o shaft	UTD400/600
	Motor operator	83471172301	MOP2U, DC24V	UTD250
		83471172302	MOP2U, AC110V/DC110V	UTD250
		83471172303	MOP2U, AC230V/DC220V	UTD250
		83471173201	MOP3U, DC24V	UTD400/600
		83471173202	MOP3U, AC110V/DC110V	UTD400/600
		83471173203	MOP3U, AC230V/DC220V	UTD400/600
	Motor operator w/ lock function	83471172304	MOP2U-L, DC24V	UTD250
		83471172305	MOP2U-L, AC110V/DC110V	UTD250
		83471172306	MOP2U-L, AC230V/DC220V	UTD250
		83471173204	MOP3U-L, DC24V	UTD400/600
		83471173205	MOP3U-L, AC110V/DC110V	UTD400/600
		83471173206	MOP3U-L, AC230V/DC220V	UTD400/600
	Lug terminal	70821172030	AL250TS(set of 2)	UTD250
		70821173052	AL400TS(set of 2)	UTD400
		70821173051	AL600TS(set of 2)	UTD600

# Characteristic curve

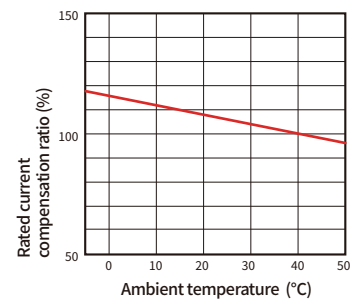
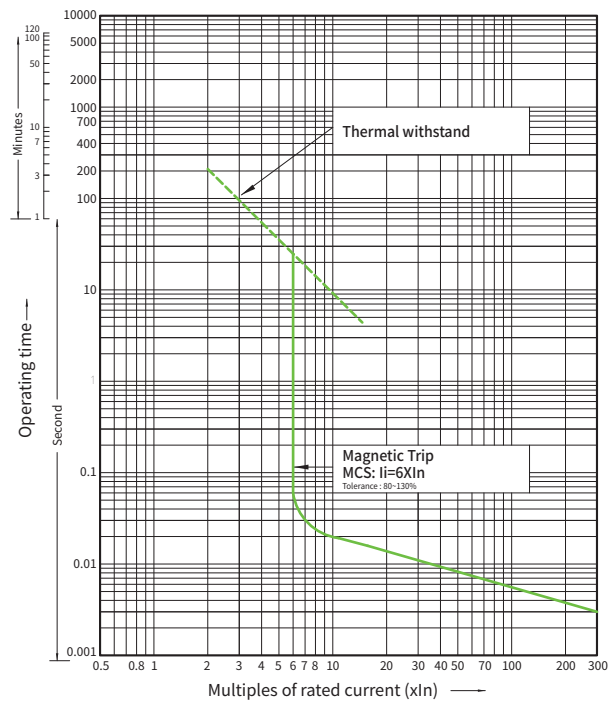
## UTD250 MCCB

FTU  
FMU  
40, 60, 80, 100,  
150, 200, 250A



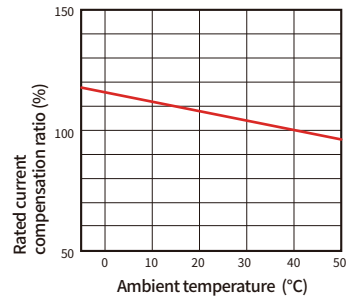
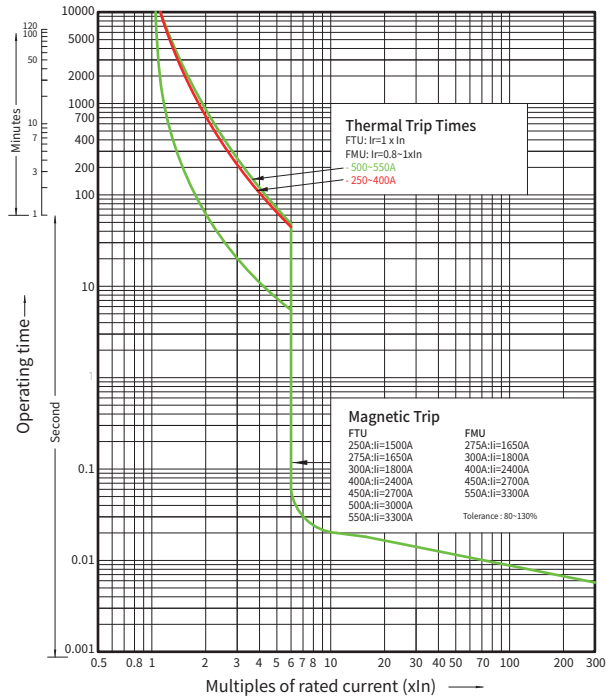
## UTD250 MCS

MCS  
200, 250A



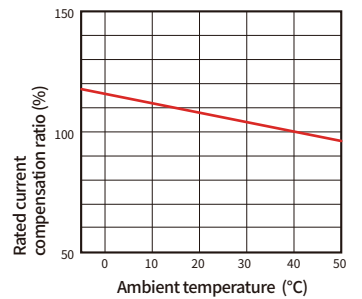
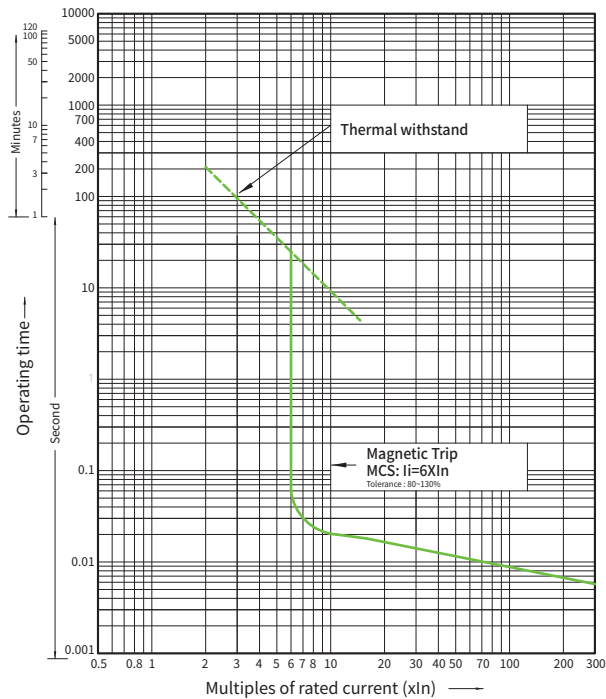
**UTD400/600 MCCB**

FTU  
 FMU  
 250, 275, 300, 400,  
 450, 500, 550A



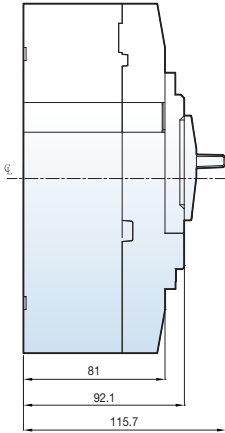
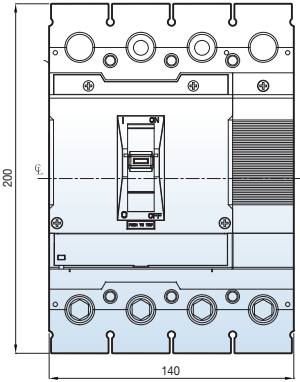
**UTD400/600 MCS**

MCS  
 275, 400, 450,  
 550A

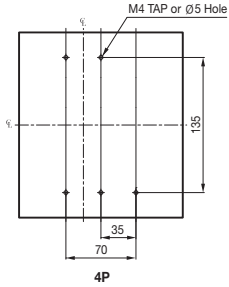


# Dimensions

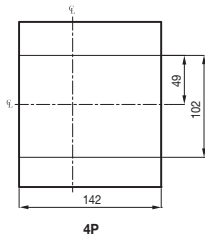
## UTD250



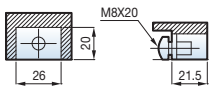
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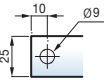
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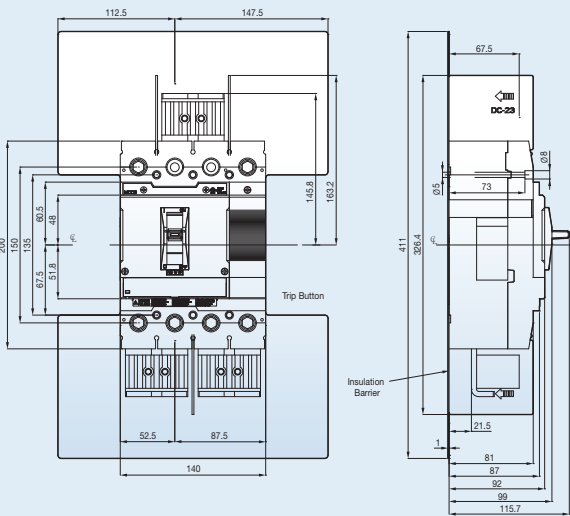
Terminal section



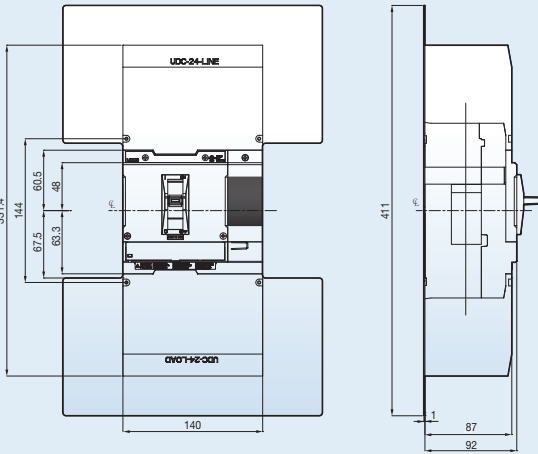
Conductor



< Short busbar apply >

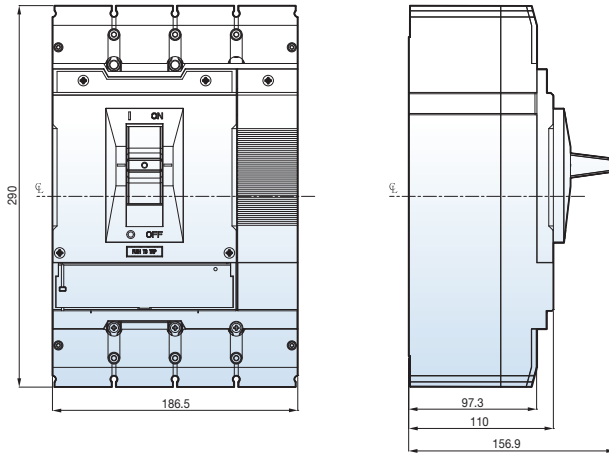


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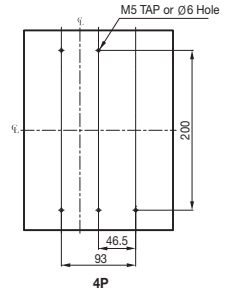




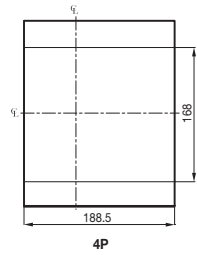
UTD400



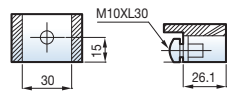
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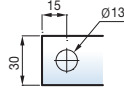
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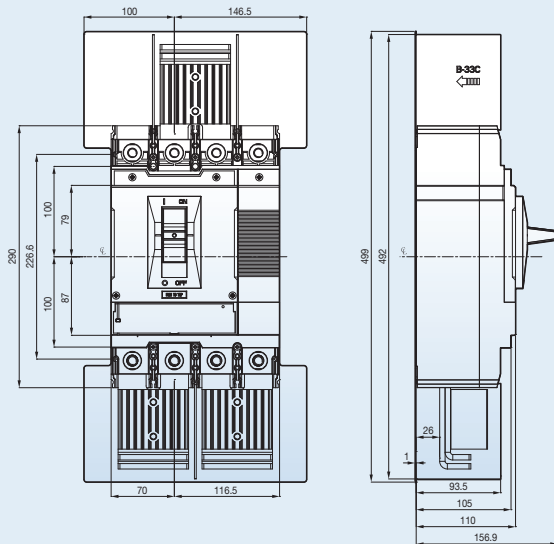
Terminal section



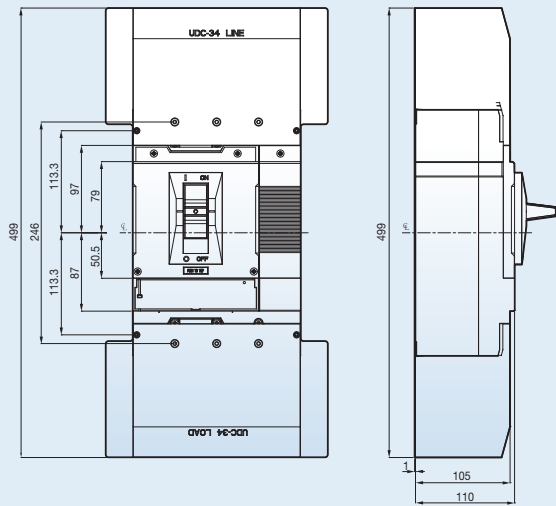
Conductor



< Short busbar apply >

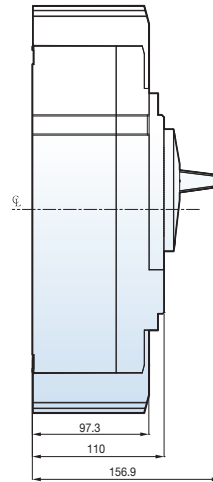
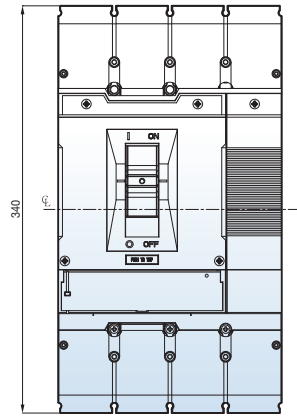


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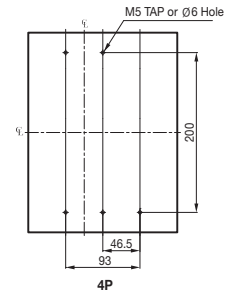


# Dimensions

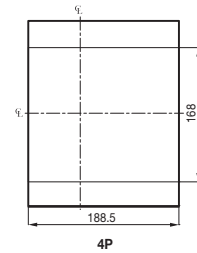
## UTD600



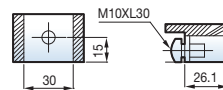
### < Panel drilling >



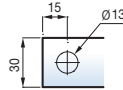
### < Front panel cutting >



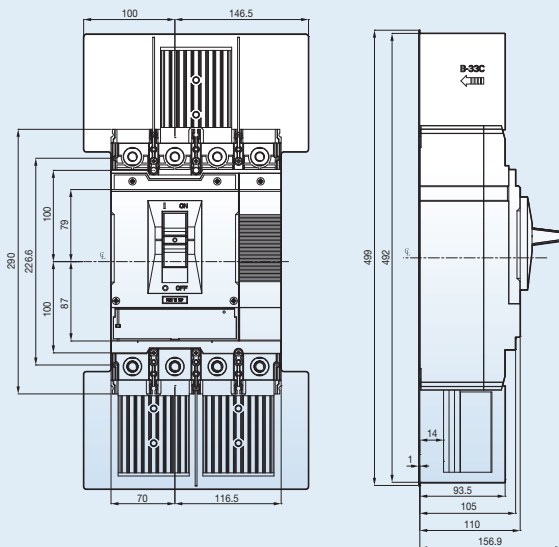
### Terminal section



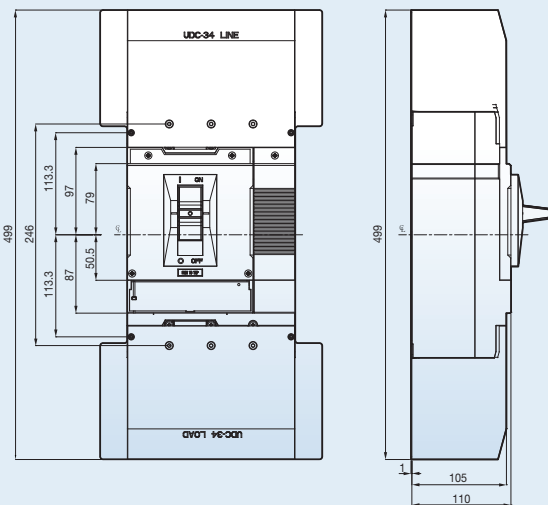
### Conductor



### < Short busbar apply >



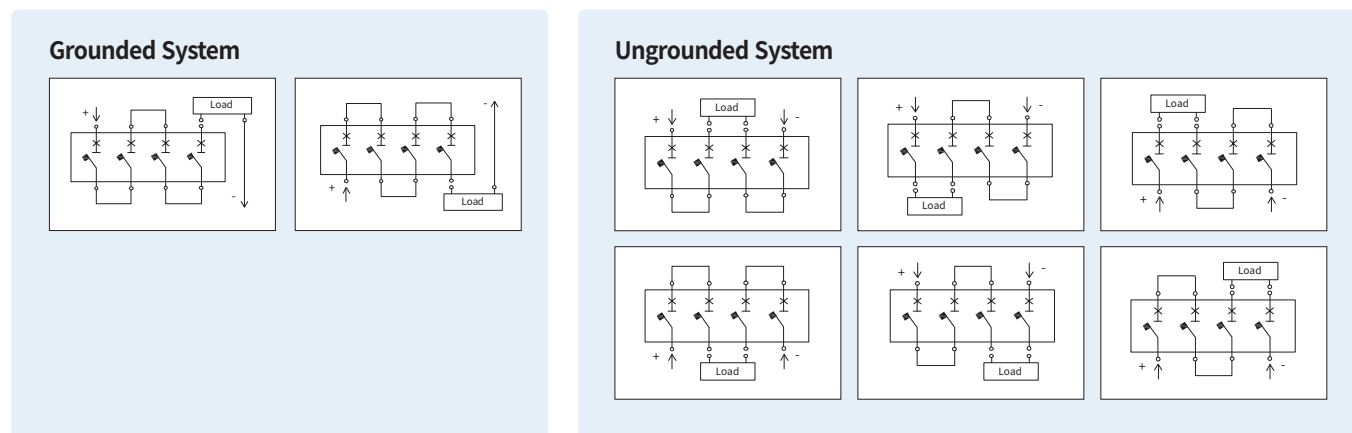
### < Terminal cover apply >



# Wiring diagram and Temperature derating

UL 1500VDC MCCB

## Wiring diagram



## Temperature derating

Type	Rated Current (A)	Derating Current (A)	Compensated rated current in accordance with ambient temperature(A)										Terminal Connection								
			10°C		20°C		30°C		40°C		45°C			50°C		60°C		70°C			
UL489	UTD250	60	60	100%	60	100%	60	100%	60	100%	60	100%	59	98%	57	95%	53	89%	50	83%	Busbar 5T (Item Code 83261172113)
		80	80	100%	80	100%	80	100%	80	100%	80	100%	78	98%	76	95%	71	89%	66	83%	Busbar 5T (Item Code 83261172113)
		100	100	100%	100	100%	100	100%	100	100%	100	100%	98	98%	95	95%	89	89%	83	83%	Busbar 5T (Item Code 83261172113)
		150	150	100%	150	100%	150	100%	150	100%	150	100%	146	97%	141	94%	132	88%	123	82%	Busbar 5T (Item Code 83261172113)
		200	200	100%	200	100%	200	100%	200	100%	200	100%	196	98%	190	95%	178	89%	166	83%	Busbar 5T (Item Code 83261172113)
	UTD400	250	250	100%	250	100%	250	100%	250	100%	250	100%	243	97%	235	94%	220	88%	205	82%	Busbar 5T + Heat Sink (Item Code 83261172112)
		275	275	100%	275	100%	275	100%	275	100%	275	100%	267	97%	259	94%	242	88%	226	82%	Busbar 6T x 2 + Heat Sink (Item Code 83261173650)
		300	300	100%	300	100%	300	100%	300	100%	300	100%	291	97%	281	94%	264	88%	246	82%	Busbar 6T x 2 + Heat Sink (Item Code 83261173650)
	UTD600	400	400	100%	400	100%	400	100%	400	100%	400	100%	390	98%	378	95%	357	89%	333	83%	Busbar 6T x 2 + Heat Sink (Item Code 83261173650)
		450	450	100%	450	100%	450	100%	450	100%	450	100%	441	98%	428	95%	401	89%	374	83%	Busbar 10T x 2 + Heat Sink x 2 (Item Code 83261173651)
500		500	100%	500	100%	500	100%	500	100%	500	100%	488	98%	476	95%	446	89%	416	83%	Busbar 10T x 2 + Heat Sink x 2 (Item Code 83261173651)	
	550	550	100%	550	100%	550	100%	550	100%	550	100%	532	97%	515	94%	486	88%	453	82%	Busbar 10T x 2 + Heat Sink x 2 (Item Code 83261173651)	

Type	Rated Current (A)	Derating Current (A)	Compensated rated current in accordance with ambient temperature(A)										Terminal Connection								
			10°C		20°C		30°C		40°C		45°C			50°C		60°C		70°C			
UL489B	UTD250	40	40	100%	40	100%	40	100%	40	100%	40	100%	40	100%	40	100%	39	98%	38	95%	Busbar 5T (Item Code 83261172113)
		60	60	100%	60	100%	60	100%	60	100%	60	100%	60	100%	60	100%	59	98%	57	95%	Busbar 5T (Item Code 83261172113)
		80	80	100%	80	100%	80	100%	80	100%	80	100%	80	100%	80	100%	78	98%	76	95%	Busbar 5T (Item Code 83261172113)
		100	100	100%	100	100%	100	100%	100	100%	100	100%	100	100%	100	100%	98	98%	95	95%	Busbar 5T (Item Code 83261172113)
		150	150	100%	150	100%	150	100%	150	100%	150	100%	150	100%	150	100%	146	97%	141	94%	Busbar 5T (Item Code 83261172113)
	UTD400	200	200	100%	200	100%	200	100%	200	100%	200	100%	200	100%	200	100%	196	98%	190	95%	Busbar 5T + Heat Sink (Item Code 83261172112)
		250	250	100%	250	100%	250	100%	250	100%	250	100%	250	100%	250	100%	243	97%	235	94%	Busbar 6T x 2 + Heat Sink (Item Code 83261173650)
		275	275	100%	275	100%	275	100%	275	100%	275	100%	275	100%	275	100%	267	97%	259	94%	Busbar 6T x 2 + Heat Sink (Item Code 83261173650)
	UTD600	300	300	100%	300	100%	300	100%	300	100%	300	100%	300	100%	300	100%	291	97%	281	94%	Busbar 6T x 2 + Heat Sink (Item Code 83261173650)
		400	400	100%	400	100%	400	100%	400	100%	400	100%	400	100%	400	100%	390	98%	378	95%	Busbar 6T x 2 + Heat Sink (Item Code 83261173650)
450		450	100%	450	100%	450	100%	450	100%	450	100%	450	100%	450	100%	441	98%	428	95%	Busbar 10T x 2 + Heat Sink x 2 (Item Code 83261173651)	



### 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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