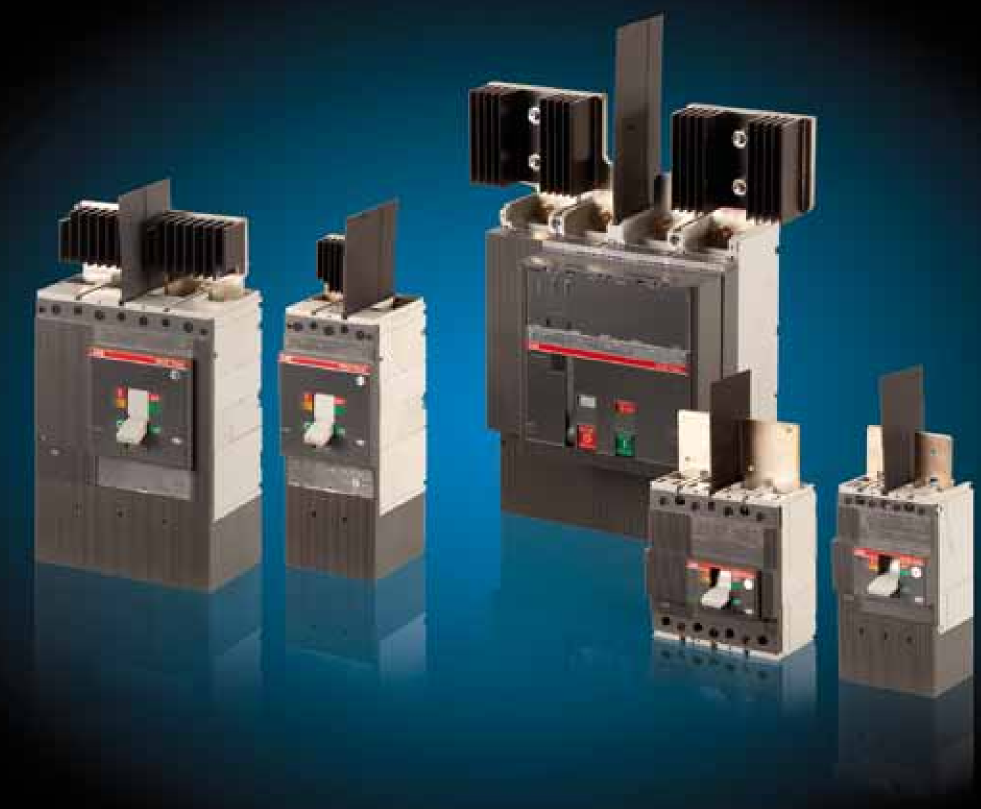


Technical catalog - Edition 2014

SACE Tmax PV
Adaptability, versatility and complete freedom continue

Power and productivity
for a better world™

SACE Tmax PV automatic molded case circuit-breakers and molded case switch-disconnectors

The Tmax PV line of IEC switch-disconnectors and UL switch-disconnectors and molded case circuit-breakers expands upon Tmax T Generation's history of offering complete adaptability, versatility and freedom for any type of application.

Using the Tmax PV line, the customer is able to select the most appropriate device for any Solar PV need.
Under IEC 60947-3, Tmax PV offers switch-disconnectors to meet standard 1100V DC applications. In addition, it offers the versatility of extended capacities to 1500V DC for the increasingly demanding solar applications of today's market. Finally, connection jumpers are an available option for the IEC switch-disconnectors to increase safety and ease of installation.
Tmax Automatic Circuit-breakers according to IEC up to 1000V DC are available as a special version of the standard Tmax line. Information about that range can be found in the Tmax technical catalogue.

Common data		
Operating temperature	[°C]	-25 °C ... +70 °C
Storage temperature	[°C]	-40 °C ... +70 °C
Numbers of poles		4
Version		fixed

Under UL 489B, Tmax PV offers adaptability in the form of the availability of both switch-disconnectors and molded case circuit-breakers. Multiple formats allows for the ability of a uniform end product and shared accessories. In addition, ABB offers connection jumpers as a mandatory accessory to Tmax PV UL. The jumpers provide simple, safe use and ensured compliance to new UL regulations.

Common data		
Operating temperature	[°C]	-25 °C … +70 °C
Storage temperature	[°C]	-40 °C … +70 °C
Numbers of poles		3 - 4
Version		fixed

SACE Tmax PV automatic molded case circuit-breakers and molded case switch-disconnectors

Thanks to the extremely low short-circuit current generated by PV panels, the use of molded-case switch-disconnectors is widely adopted both in combiner boxes and in the DC side of the inverters:

Molded case switch-disconnectors up to 1100V DC in compliance with IEC 60947-3

Electrical charachteristics

Tmax PV switch-disconnectors in compliance with the IEC60947-3		T1D/PV	T3D/PV	T4D/PV	T5D/PV	T6D/PV	T7D/PV [1]
Conventional thermal current, Ith	(A)	160	250	250	630	800	1250-1600
Rated service current in category DC22 B, Ie	(A)	160	200	250	500	800	1250-1600
Number of poles	(No.)	4	4	4	4	4	4
Rated service voltage, Ue		1100V DC	1100V DC	1100V DC	1100V DC	1100V DC	1100V DC
Rated impulse withstand voltage, Uimp	(kV)	8	8	8	8	8	8
Rated insulation voltage, Ui	(V)	1150V DC	1150V DC	1150V DC	1150V DC	1150V DC	1150V DC
Test voltage at industrial frequency for 1 minute	(V)	3500	3500	3500	3500	3500	3500
Rated short-circuit making capacity, switch-disconnector only, Icm	(kA)	1.92	2.4	3	6	9.6	19.2
Rated short-time withstand current for 1s, Icw	(kA)	1.92	2.4	3	6	9.6	19.2
Versions		F	F	F	F	F	F
Standard terminals		FC Cu	FC Cu	F	F	F	F
Mechanical life with motor	(No. Operations)	15000	15000	7500	7500	7500	20000
Electrical life (operations @ 1100V DC)	(No. Operations)	500	500	500*	500*	500*	500*
Basic dimensions	W (mm/in)	102/4.02	140/5.52	140/5.52	186/7.33	280/11.02	280/11.02
	D (mm/in)	70/2.76	70/2.76	103.5/4.07	103.5/4.07	103.5/4.07	154/6.06 (manual) 178/7.01 (motorized)
	H (mm/in)	130/5.12	150/5.91	205/8.07	205/8.07	268/10.55	268/10.55
Weight (with standard terminals only)	(kg/lbs)	1.2/2.65	2/4.41	3.05/6.72	4.15/9.15	12/26.46	12.5/27.56 (manual) 14/30.86 (motorized)

1) installation in vertical position only
* openings with SOR or UVR

Molded case switch-disconnectors up to 1500V DC in compliance with IEC 60947-3

Electrical charachteristics

Tmax PV switch-disconnectors in compliance with the IEC60947-3		T4D/E PV	T5D/E PV	T7D/PV-E
Conventional thermal current, Ith	(A)	250	500	1250-1600
Rated service current in category DC22 A, Ie	(A)	250	500	1250-1600
Number of poles	(No.)	4	4	4
Rated service voltage, Ue		1500V DC	1500V DC	1500V DC
Rated impulse withstand voltage, Uimp	(kV)	8	8	8
Rated insulation voltage, Ui	(V)	1500V DC	1500V DC	1500V DC
Test voltage at industrial frequency for 1 minute	(V)	3500	3500	3500
Rated short-circuit making capacity, switch-disconnector only, Icm	(kA)	3	6	19.2
Rated short-time withstand current for 1s, Icw	(kA)	3	6	19.2
Versions		F	F	F
Standard terminals		F	F	F
Mechanical life	(No. Operations)	7500	7500	20000
Electrical life (operations @ 1500V DC)	(No. Operations)	1000*	1000*	500*
Basic dimensions	W (mm/in)	140/5.52	186/7.33	280/11.02
	D (mm/in)	103.5/4.07	103.5/4.07	178/7.01
	H (mm/in)	205/8,07	205/8.07	268/10.55
Weight (with standard terminals only)	(kg/lbs)	3.05/6.72	3,15/9.15	14/30.86

* openings with SOR or UVR

Molded case switch-disconnectors up to 1000V DC in compliance with UL 489B

Electrical charachteristics

Tmax PV UL switch-disconnectors		T1N-D/PV	T4N-D/PV	T5N-D/PV	T6N-D/PV	T7N-D/PV [1)]
Frame size	(A)	100	200	400	600-800	1000
Rated service current	(A)	100	200	400	600-800	1000
Number of poles	(No.)	4	3	3	4	4
Rated service voltage	(V)	1000V DC	1000V DC	1000V DC	1000V DC	1000V DC
Short-circuit current withstand	(kA)	1.2	3	5	10	18
Magentic override	(kA)	-	3	5	10	-
Versions		F	F	F	F	F
Connections*		Jumpers	Jumpers	Jumpers	Jumpers	Jumpers
Terminals provided with Jumper kit		FCCu	FCCuAl	FCCu-ES	FCCuAl-EF	FCCuAl-F
Mechanical life with Motor	(No. Operations)	15000	7500	7500	7500	20000
Electrical life (operations @ 1000V DC)	(No. Operations)	1000	1000**	500**	500**	500**
Basic dimensions	W (mm/in)	102/4.02	105/4.13	140/5.52	280/11.02	280/11.02
	D (mm/in)	70/2.76	103.5/4.07	103.5/4.07	103.5/4.07	178/7.01
	H (mm/in)	130/5.12	205/8.07	205/8.07	268/10.55	268/10.55
Weight (with standard terminals only)	(kg/lbs)	1.2/2.65	2.35/5.18	3.25/7.17	12/26.46	14/30.86

1) installation in vertical position only
* Selection of one of the jumper connection options is mandatory for Tmax PV UL
** openings with SOR or UVR

Whenever a consistent short-circuit current can be found (like in recombiner boxes), 1000V DC automatic circuit-breakers are available in the Tmax range. Below is the UL489B automatic circuit-breaker offering:

Molded case circuit-breakers up to 1000V DC in compliance with UL 489B

Electrical charachteristics

Tmax PV UL MCCBs		T4N/PV	T5N/PV	T6N/PV
Frame size	(A)	200	400	600-800
Rated service current	(A)	40-200	225-250-300-400	600-800
Number of poles	(No.)	3	3	4
Rated service voltage	(V)	1000V DC	1000V DC	1000V DC
Short-circuit interrupting rating @ 1000V DC	(kA)	7.5	5	10
Trip Unit		TMD/TMA	TMF/TMA	TMA
Versions		F	F	F
Standard terminals		F	F	F
Connections*		Jumpers	Jumpers	Jumpers
Terminals provided with Jumper kit		FCCuAl	FCCuAl-FCCu-ES	FCCuAl-EF
Mechanical life with motor	(No. Operations)	7500	7500	7500
Electrical life (operations @ 1000 VDC)	(No. Operations)	1000**	500**	500**
Basic dimensions	W (mm/in)	105/4.13	140/5.52	280/11.02
	D (mm/in)	103.5/4.07	103.5/4.07	103.5/4.07
	H (mm/in)	205/8.07	205/8.07	268/10.55
Weight (with standard terminals only)	(kg/lbs)	2.35/5.18	3.25/7.17	12/26.46

* Selection of one of the jumper connection options is mandatory for Tmax PV UL
** openings with SOR or UVR

SACE Tmax PV automatic molded case circuit-breakers and molded case switch-disconnectors

The UL circuit-breaker range is divided into three different frames, T4, T5 and T6, with an application range from 40A to 800A and breaking capacities up to 10kA at 1000V DC.

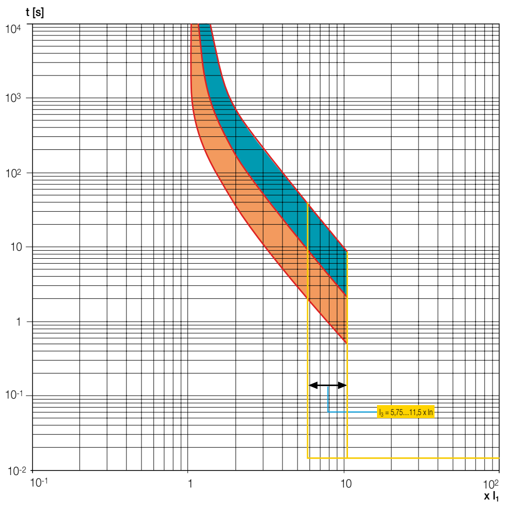
The circuit-breakers are fitted with thermal magnetic trip units and are used for protection of direct current solar networks. They allow the protection against overload with a thermal device that uses the bimetal technique, and protection against short-circuit with a magnetic device.
The range of T4, T5 and T6 circuit-breakers for photovoltaic applications includes the following:

- **T4 (up to 50A) circuit-breakers equipped with TMD thermal magnetic trip units** with adjustable thermal threshold (I1 = 0.7…1 x In) and fixed magnetic threshold (I3 = 10 x In).
- **T4, T5 and T6 circuit-breakers equipped TMA thermal magnetic trip units** with adjustable thermal threshold (I1 = 0.7…1 x In) and adjustable magnetic threshold (I3 = 5…10 x In). Only for T5 225, 250 and 300 A a special TMF trip unit is given: this TMF unit has fixed thermal threshold and adjustable magnetic threshold (I3=1500…3000 A).

The magnetic threshold for Tmax T4, Tmax T5 and Tma T6 is affected by a corrective factor of 15% because the TMD and TMA releases were originally calibrated to be used in AC networks. The curves for the PV line are shown below.

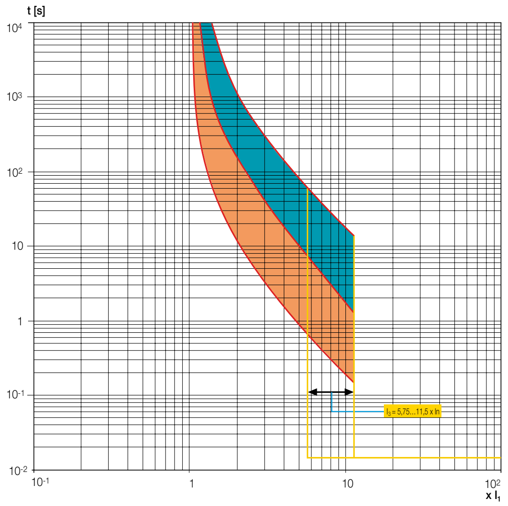
T4N/PV UL 200

In = 40 ... 200A



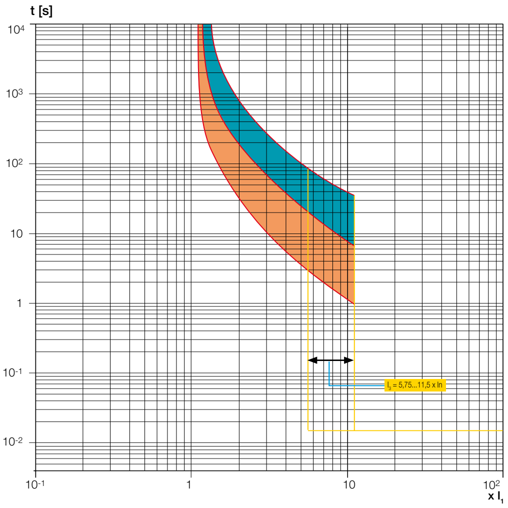
T5N/PV UL 400

In = 225, 250, 300, 400A



T6N/PV UL 600

In = 600A



T6N/PV UL 800

In = 800A

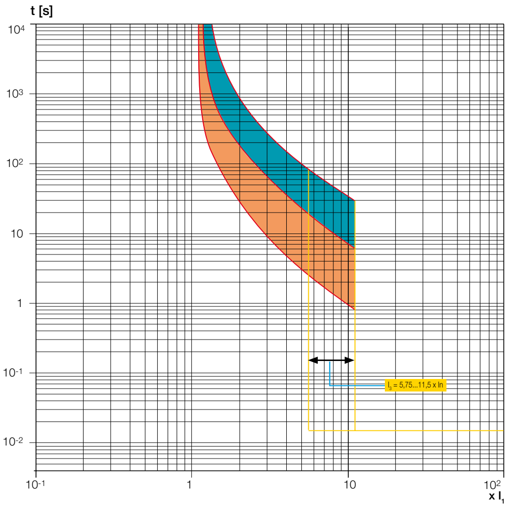
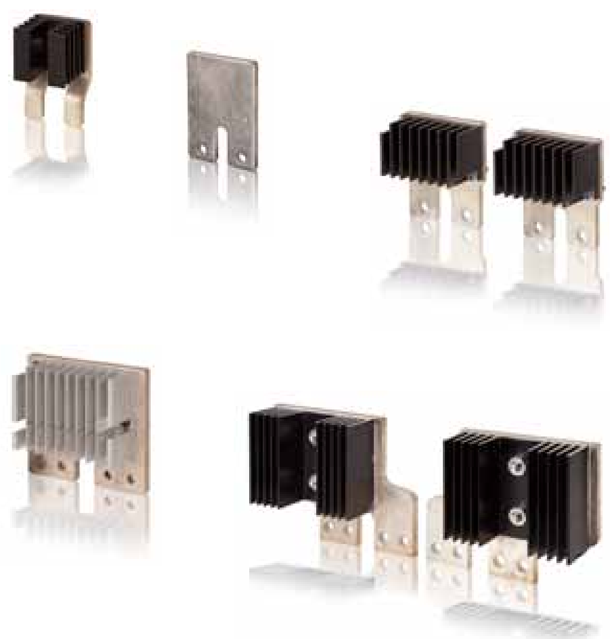
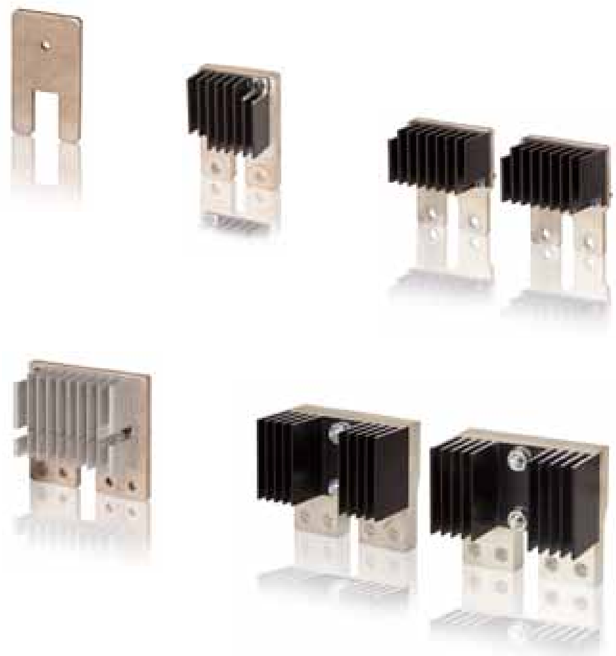


ABB jumpers for pole-to-pole connection are the tested solution for a simplified and safe installation.

As already mentioned, another innovation of the Tmax PV series is the possibility of accessorizing the breakers and switch-disconnectors with suitable jumpers.
Tmax PV are 3 or 4 pole breakers: in order to break the direct current is necessary to put these poles in series on one, or both, the polarities. Jumpers between poles are therefore necessary: for example a 4PS (PS = Poles in Series) jumper kit puts all 4 poles of a breaker in series on one polarity.

One jumper kit ordering code includes 1, 2 or 3 jumpers, plus required lugs and accessories if needed. The jumpers are realized with or without heat sinks, depending on the breaker frame and regulating standard, and UL and IEC kits for the same frames can be different.
Jumper kits are divided into two versions: one for cabling all the poles on one single polarity (identified as 4PS or 3PS) and one for dividing the poles on both polarities (identified as 2+2PS or 2+1PS).





Quick reference tables

Tmax PV offers a wide choice of terminals for connection with busbars and cables. In the following tables, all the different options (related to the pole connections) are given:

Tmax PV switch-disconnectors up to 1100V DC in compliance with IEC60947-3

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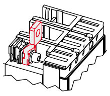
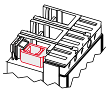
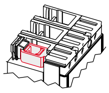
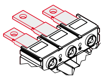
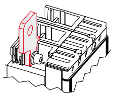
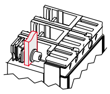
<tr><th>IEC MCS</th><th>Configuration & Supply</th><th>EF </th><th>FCCu </th><th>FCCuAl </th><th>HR </th><th>ES </th><th>F </th></tr>
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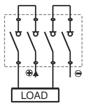
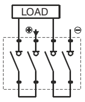
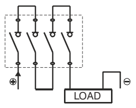
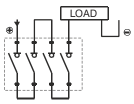
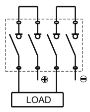
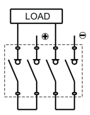
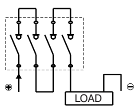
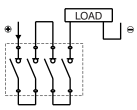
<tr><td rowspan="4">T1 (160 A) </td><td>2+2 - lower </td><td rowspan="2">Compatible</td><td rowspan="4">Standard Supply</td><td rowspan="4">Not Compatible</td><td rowspan="2">Compatible</td><td rowspan="4">Not Compatible</td><td rowspan="4">Not Compatible</td></tr>
<tr><td>2+2 - upper </td></tr>
<tr><td>4PS - lower </td><td rowspan="2">Compatible</td><td rowspan="2">Compatible</td></tr>
<tr><td>4PS - upper </td></tr>
<tr><td rowspan="4">T3 (200 A) </td><td>2+2 - lower </td><td rowspan="2">Compatible</td><td rowspan="4">Standard Supply</td><td rowspan="2">Compatible</td><td rowspan="4">Not Compatible</td><td rowspan="4">Not Compatible</td><td rowspan="2">Compatible</td></tr>
<tr><td>2+2 - upper </td></tr>
<tr><td>4PS - lower </td><td rowspan="2">Compatible</td><td rowspan="2">Compatible</td><td rowspan="2">Compatible</td></tr>
<tr><td>4PS - upper </td></tr>
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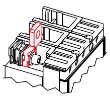
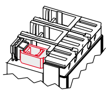
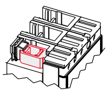
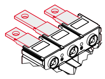
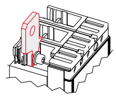
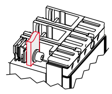
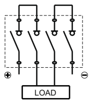
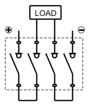
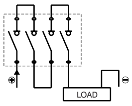
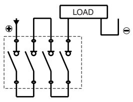
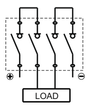
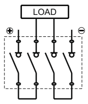
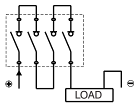
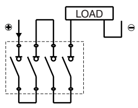
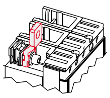
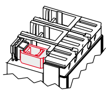
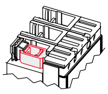
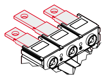
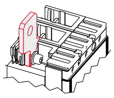
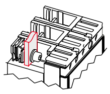
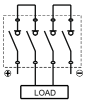
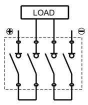
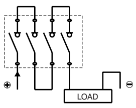
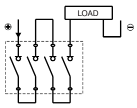
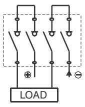
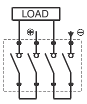
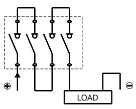
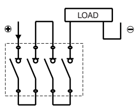
Tmax PV switch-disconnectors up to 1100V DC in compliance with IEC60947-3

IEC MCS	Configuration & Supply	EF 	FCCu 	FCCuAl 	HR 	ES 	F 
Size							
T4 (250 A) 	2+2 - lower 	Compatible	Compatible	Compatible	Not Compatible	Not Compatible	Standard Supply
	2+2 - upper 						
	4PS - lower 	Compatible	Compatible	Compatible			
	4PS - upper 						
T5 (500 A) 	2+2 - lower 	Compatible	Compatible	Not Compatible	Not Compatible	Not Compatible	Standard Supply
	2+2 - upper 						
	4PS - lower 	Compatible	Compatible				
	4PS - upper 						

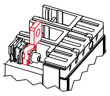
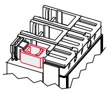
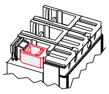
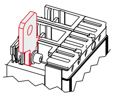
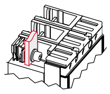
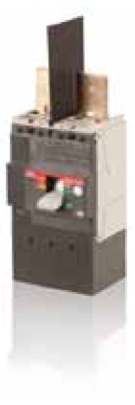
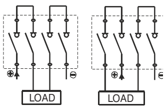
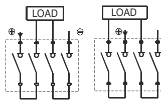
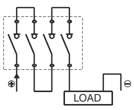
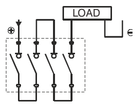
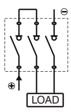
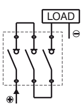
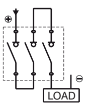
Quick reference tables

Tmax PV switch-disconnectors up to 1100V DC in compliance with IEC60947-3

<table>
<tr><th>IEC MCS</th><th>Configuration & Supply</th><th>EF </th><th>FCCu </th><th>FCCuAl </th><th>HR </th><th>ES </th><th>F </th></tr>
<tr><td colspan="8">Size</td></tr>
<tr><td rowspan="4">T6 (800 A) </td><td>2+2 - lower </td><td>Compatible</td><td rowspan="4">Not Compatible</td><td rowspan="2">Compatible</td><td rowspan="4">Not Compatible</td><td rowspan="4">Not Compatible</td><td rowspan="4">Standard Supply</td></tr>
<tr><td>2+2 - upper </td><td>Not Compatible</td></tr>
<tr><td>4PS - lower </td><td>Compatible</td><td rowspan="2">Compatible</td></tr>
<tr><td>4PS - upper </td><td>Not Compatible</td></tr>
<tr><td rowspan="4">T7 (1600 A) </td><td>2+2 - lower </td><td rowspan="2">Compatible</td><td rowspan="4">Not compatible</td><td rowspan="2">Compatible</td><td>Compatible *</td><td>Compatible</td><td rowspan="4">Standard Supply</td></tr>
<tr><td>2+2 - upper </td><td>Not compatible</td><td>Not compatible</td></tr>
<tr><td>4PS - lower </td><td rowspan="2">Compatible</td><td>Compatible</td><td rowspan="2">Not compatible</td><td>Compatible</td></tr>
<tr><td>4PS - upper </td><td>Not compatible</td><td>Not compatible</td></tr>
</table>

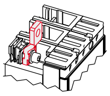
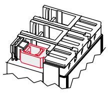
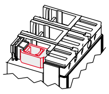
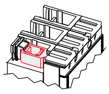
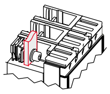
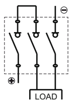
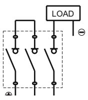
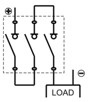
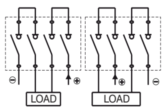
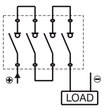
*** Vertical (VR) terminals can be used too**

Tmax PV switch-disconnectors and automatic circuit-breakers up to 1000V DC in compliance with UL 489B

UL MCS and automatic citcuit-breakers	Configuration & Supply	EF 	FCCu 	FCCuAl 	ES 	F 
Size						
T1 (100 A) 	2+2 - lower 	Not compatible	Standard supply	Not compatible	Not compatible	Not compatible
	2+2 - upper 					
	4PS - lower 					
	4PS - upper 					
T4 (200 A) 	2+1 - lower 	Not compatible	Not compatible	Included with jumpers kit	Not compatible	Not compatible
	3PS - lower 	Not compatible	Not compatible			
	3PS - upper 					

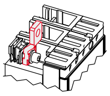
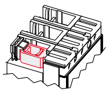
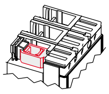
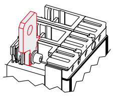
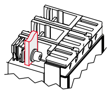
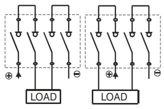
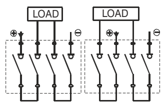
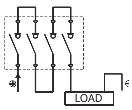
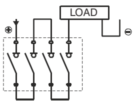
Quick reference tables

Tmax PV switch-disconnectors and automatic citcuit-breakers up to 1000V DC in compliance with UL 489B

UL MCS and automatic citcuit-breakers	Configuration & Supply	EF 	FCCu 	FCCuAl 	ES 	F 
Size						
T5 (225-250-300-400A) 	2+1 - lower 	Not compatible	Included with jumpers kit "lug type" *	Included with jumpers kit "lug type" **	Included with jumpers kit "busbar type" ***	Not compatible
	3PS - lower 	Not compatible		Included with jumpers kit "lug type" **		
	3PS - upper 	Not compatible		Included with jumpers kit "lug type" **		
T6 (800 A) 	2+2 - lower 	Included with jumpers kit "busbar type"	Not compatible	Included with jumpers kit "lug type"	Not compatible	Not compatible
	4PS - lower 					

* T5 300 and 400A only
** T5 225 and 250A only
*** T5 400A only

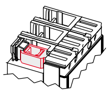
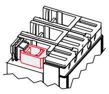
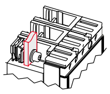
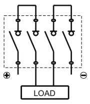
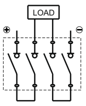
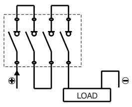
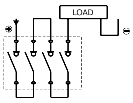
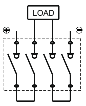
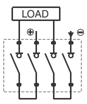
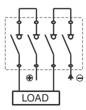
Tmax PV switch-disconnectors and automatic citcuit-breakers up to 1000V DC in compliance with UL 489B

UL MCS and automatic citcuit-breakers	Configuration & Supply	EF 	FCCu 	FCCuAl 	ES 	F 
Size						
T7 (1000 A) 	2+2 - lower 	Not compatible	Not compatible	Included with jumpers kit "lug type"	Not compatible	Included with jumpers kit "busbar type"*
	2+2 - upper 					
	4PS - lower 					
	4PS - upper 					

* Ask ABB for availability

Quick reference tables

Tmax PV switch-disconnectors up to 1500V DC in compliance with IEC 60947-3

IEC 1500V DC MCS	Configuration & Supply	FCCu	FCCuAl	F
				
Size				
T4 	2+2 - lower 	Compatible	Compatible	Standard Supply
	2+2 - upper 			
	4PS - lower 	Compatible	Compatible	
	4PS - upper 			
T5 	2+2 - upper 	Compatible	Not compatible	Standard Supply
T7 	2+2 - upper   *	Not compatible	Compatible	Standard Supply

(*) Valid only when 1250 A jumpers are used

Derating

Temperature perfomances of Tmax PV at temperatures other than 40 °C are reported in the following tables:

T1D/PV IEC	FCCu
Temperature [°C]	I [A]
40	160
45	160
50	160
55	160
60	153
65	145
70	138

T3D/PV IEC	FCCu
Temperature [°C]	I [A]
40	200
45	200
50	200
55	200
60	200
65	190
70	179

T4D/PV IEC	F-FCCu
Temperature [°C]	I [A]
40	250
45	250
50	250
55	250
60	250
65	237
70	224

T5D/PV IEC	F-FCCu
Temperature [°C]	I [A]
40	500
45	500
50	500
55	500
60	500
65	474
70	447

T6D/PV IEC	F-FCCuAl
Temperature [°C]	I [A]
40	800
45	771
50	741
55	709
60	676
65	641
70	605

T7D/PV 1250 IEC	F-FCCuAl
Temperature [°C]	I [A]
40	1250
45	1225
50	1199
55	1171
60	1141
65	1109
70	1074

T7D/PV 1600 IEC	F-FCCuAl
Temperatura [°C]	I [A]
40	1600
45	1542
50	1481
55	1418
60	1352
65	1283
70	1209

Sum-Up table for temperature derating

Temperature [°C] / In [A]	T1D/PV IEC	T3D/PV IEC	T4D/PV IEC	T5D/PV IEC	T6D/PV IEC	T7D/PV 1250 IEC	T7D/PV 1600 IEC
40	160	200	250	500	800	1250	1600
45	160	200	250	500	771	1225	1542
50	160	200	250	500	741	1199	1481
55	160	200	250	500	709	1171	1418
60	153	200	250	500	676	1141	1352
65	145	190	237	474	641	1109	1283
70	138	179	224	447	605	1074	1209

Derating

Derating T1 MCS PV UL

40	100
50	100
60	87
70	71

Derating T4 MCS PV UL

40	200
50	200
60	184
70	167

Derating T5 MCS PV UL

40	400
50	400
60	386
70	372

Derating T6 MCS PV UL

40	800
50	800
60	700
70	600

Derating T7 MCS PV UL

40	1000
50	1000
55	935
60	866
65	791
70	707

Derating T4 PV UL (MCCB)

With 40 °C Cables
refer to page 17 for cable dimensions

40	200
50	180
60	166
70	150

With 50 °C Cables
refer to page 17 for cable dimensions

40	200
50	200
60	181
70	160

Derating T5 PV UL (MCCB), 225A version

With 40 °C Cables
refer to page 17 for cable dimensions

40	225
50	200
60	175
70	160

With 50 °C Cables
refer to page 17 for cable dimensions

40	225
50	225
60	200
70	175

Derating T5 PV UL (MCCB), 250A version

With 40 °C Cables
refer to page 17 for cable dimensions

40	250
50	225
60	195
70	165

With 50 °C Cables
refer to page 17 for cable dimensions

40	250
50	250
60	220
70	190

Derating T5 PV UL (MCCB), 300A version

With 40 °C Cables
refer to page 17 for cable dimensions

40	300
50	270
60	240
70	210

With 50 °C Cables
refer to page 17 for cable dimensions

40	300
50	300
60	265
70	230

Derating T5 PV UL (MCCB), 400A version

With 40 °C Cables
refer to page 17 for cable dimensions

40	400
50	387
60	373
70	300

With 50 °C Cables
refer to page 17 for cable dimensions

40	400
50	400
60	380
70	360

Derating T6 PV UL (MCCB), 600A version

With 40 °C Cables
refer to page 17 for cable dimensions

40	600
50	600
60	525
70	450

With 50 °C Cables
refer to page 17 for cable dimensions

40	600
50	600
60	525
70	450

Derating T6 PV UL (MCCB), 800A version

40	800
50	800
60	700
70	600

Sum-Up table for temperature derating

UL switch-disconnector

Temperature [°C] / In [A]	T1	T4	T5	T6	T7
40	100	200	400	800	1000
50	100	200	400	800	1000
60	87	184	386	700	866
70	71	167	372	600	707

UL automatic circuit-breakers: 40°C cables

Temperature [°C] / In [A]	T4	T5	T6
40	200	400	800
50	180	213	800
60	166	232	700
70	150	360	600

UL automatic circuit-breakers: 50°C cables

Temperature [°C] / In [A]	T4	T5	T6
40	200	400	800
50	200	400	800
60	181	380	700
70	160	360	600

Wiring

Please note that for UL MCCBs two deratings are given, according to UL489B: one when 40 °C cables are used, and one when 50 °C cables are used.

Cables dimensions are given by UL489B.

Below, please find the relevant cabling info:

Wire options for Tmax PV - UL

T1 100A

Ambiant temp	40°C	50°C
In (A)	required wires (number x section)	required wires (number x section)
100	1 x 3 AWG	1 x 1/0 AWG

T4 200A

Ambiant temp	40°C	50°C
In (A)	required wires (number x section)	
40	1 x 8 AWG	1 x 6 AWG
50	1 x 8 AWG	1 x 4 AWG
80	1 x 4 AWG	1 x 2 AWG
100	1 x 3 AWG	1 x 1/0 AWG
125	1 x 1 AWG	1 x 2/0 AWG
150	1 x 1/0 AWG	1 x 3/0 AWG
200	1 x 3/0 AWG	1 x 300 kcmil

T5 400A

Ambiant temp	40°C	50°C
In (A)	required wires (number x section)	
225	1 x 3/0 AWG	1 x 300 kcmil
250	1 x 4/0 AWG	1 x 350 kcmil
300	1 x 350 kcmil	2 x 3/0 AWG
400	2 x 3/0 AWG or 1 x 500 kcmil	2 x 300 kcmil

T6 600A

Ambiant temp	40°C	50°C
In (A)	required wires (number x section)	
600	2 x 350 kcmil	3 x 300 kcmil

T7 1000A

Ambiant temp	40°C	50°C
In (A)	required wires (number x section)	
1000	3 x 400 kcmil	4 x 400 kcmil

Power Losses and Insulation Distances

When a current passes through a molded case circuit-breaker or switch-disconnector, it dissipates heat. The Tmax series is well known for having very few power losses.

Below, please find a table with information for both UL and IEC power losses.

Type	Trip Unit	Version	In (A)	P (W/pole)
T1	MCS	UL	100	7,5
		IEC	160	15
T3	MCS	IEC	200	19
T4	MCS	UL	200	8,9
		IEC	250	14
	TMD	UL	40	3,8
			50	3,9
	TMA	UL	80	6,4
			100	7,6
			125	7,9
			150	8
			200	10
T5	MCS	UL	400	19
		IEC	500	30
	TMA	UL	400	29
T6	MCS	UL	600	31
		UL	800	48
		IEC		48
	TMA	UL	600	33
			800	50
T7	MCS	UL	1000	30
		IEC	1250	47
			1600	77

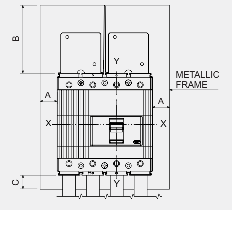
Insulation distances in air between two Tmax PV with jumpersput side by side*

[mm]	IEC	UL
T1	60	55
T3	50	-
T4	100	100
T5	100	100
T6	100	265
T7	200	330

* insulation distances can be reduced using suitable insulation barriers between breakers

Insulation distances for installation in metallic cubicle

	A [mm]	B (Jumpers side) [mm]	C (no-Jumpers side) [mm]
T1D/PV IEC	55	100	20
T3D/PV IEC	25	100	20
T4D/PV IEC	50	120	120
T5D/PV IEC	57	105	120
T6D/PV IEC	50	100	110
T7D/PV IEC 1250	100	200	200
T7D/PV IEC 1600	130	200	200



UL489B cubicle dimensions for Tmax PV

	H [mm]	W [mm]	D [mm]
T1/PV UL	370	245	72
T4/PV UL	520	420	200
T5/PV UL	710	550	175
T6/PV UL	704	540	173
T7/PV UL	704	610	173

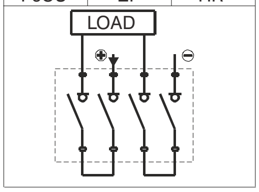
Dimensions
T1D/PV

According to IEC 60947-3

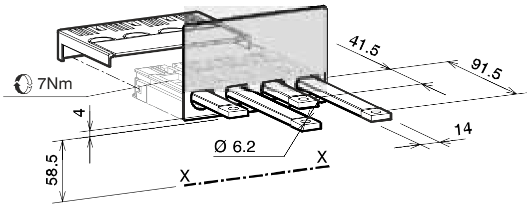
2PS+2PS solution, terminals for Upper Supply

	2PS+2PS		
Availability for Upper supply	✓	✓	✓
	FcCU	EF	HR

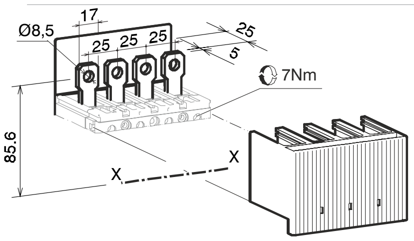
2PS+2PS
UPPER
SUPPLY



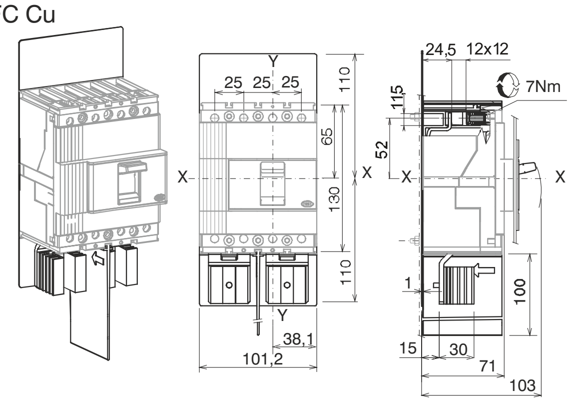
HR



EF



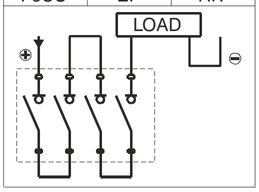
FC Cu



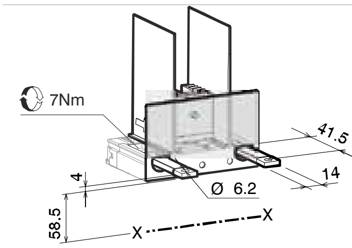
4PS solution, Terminals for Upper Supply

	4PS		
Availability for Upper supply	✓	✓	✓
	FcCU	EF	HR

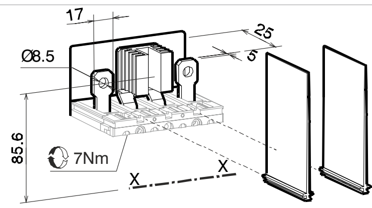
4PS
UPPER
SUPPLY



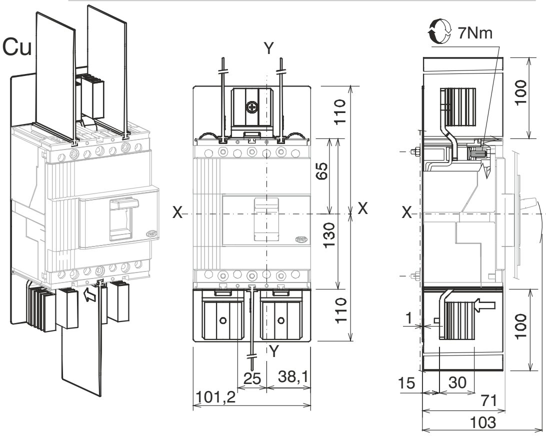
HR



EF

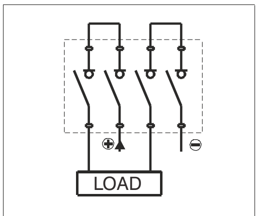


FC Cu



2PS+2PS solution, Lower Supply

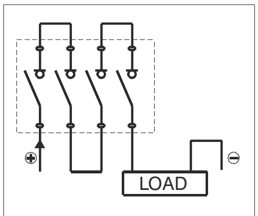
2PS+2PS
LOWER
SUPPLY



	2PS+2PS		
	FcCU	EF	HR
Availability for Lower supply*	✓	✓	✓

4PS solution, Lower Supply

4PS
LOWER
SUPPLY



	4PS		
	FcCU	EF	HR
Availability for Lower supply*	✓	✓	✓

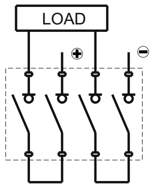
* Terminals configurations must be symmetrical with respect to x-x CB axis when CB is supplied from below.

Dimensions
T3D/PV

According to IEC 60947-3

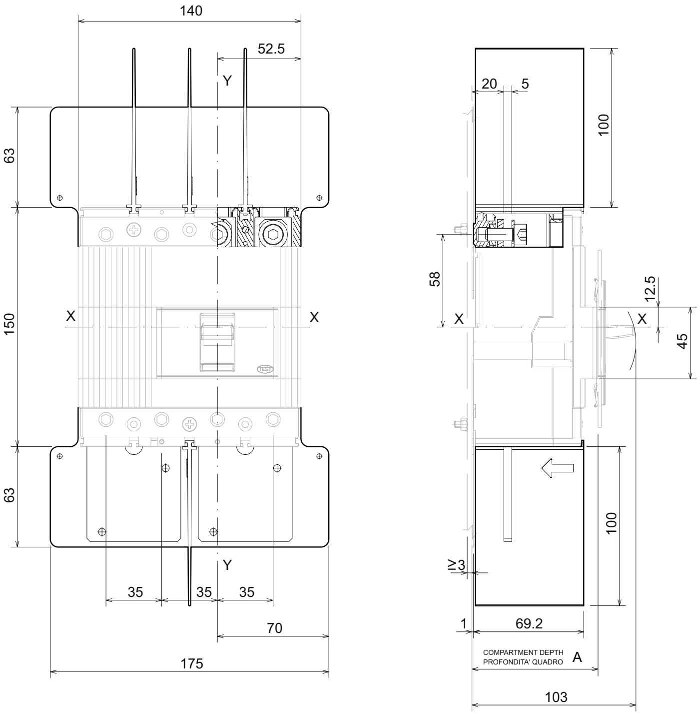
2PS+2PS solution, Upper Supply

	F	FCCu	EF	FCCuAl
Availability for Upper supply	✓	✓	✓	✓

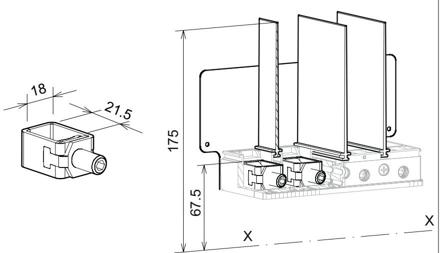


2PS+2PS
UPPER SUPPLY

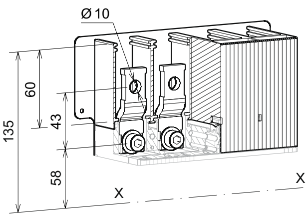
F



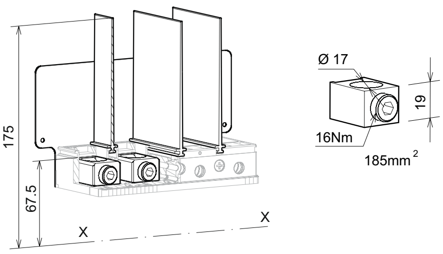
FCCu



EF

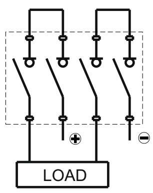


FC CuAl



2PS+2PS solution, Lower Supply

	F	FCCu	EF	FCCuAl
Availability for Lower supply	✓	✓	✓	✓

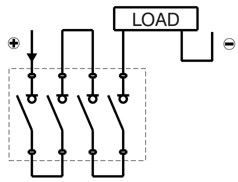


2PS+2PS
LOWER SUPPLY

* Terminals configurations must be symmetrical with respect to x-x CB axis when CB is supplied from the top

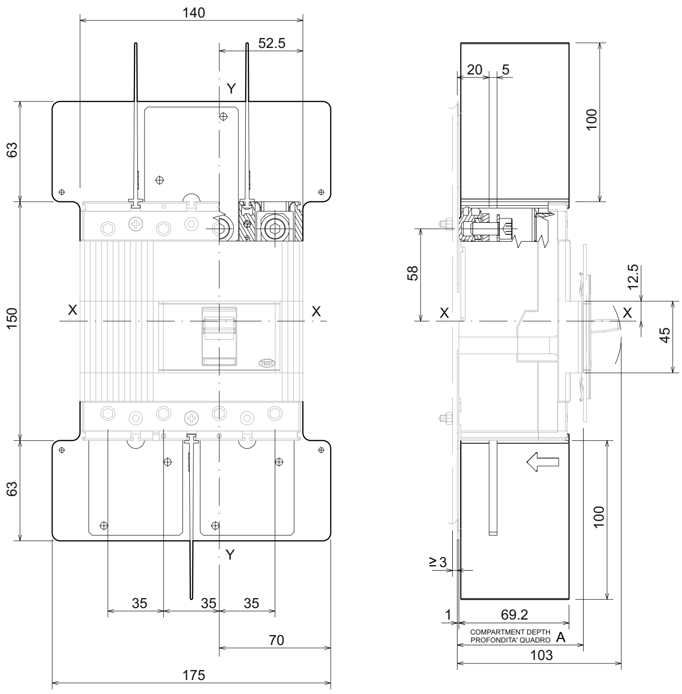
4PS solution, Upper Supply

	F	FCCu	EF	FCCuAl
Availability for Upper supply	✓	✓	✓	✓

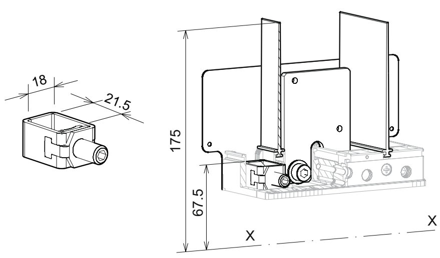


4PS
UPPER SUPPLY

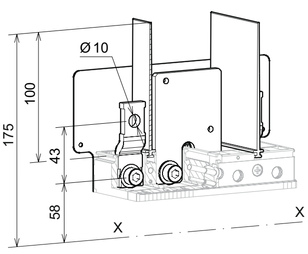
F



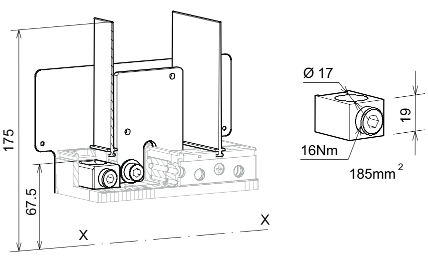
FCCu



EF

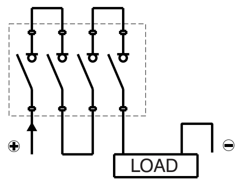


FC CuAl



4PS solution, Lower Supply

	F	FCCu	EF	FCCuAl
Availability for Lower supply	✓	✓	✓	✓



4PS
LOWER SUPPLY

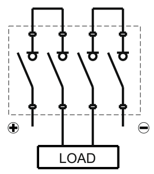
* Terminals configurations must be symmetrical with respect to x-x CB axis when CB is supplied from the top

Dimensions
T4D/PV

According to IEC 60947-3

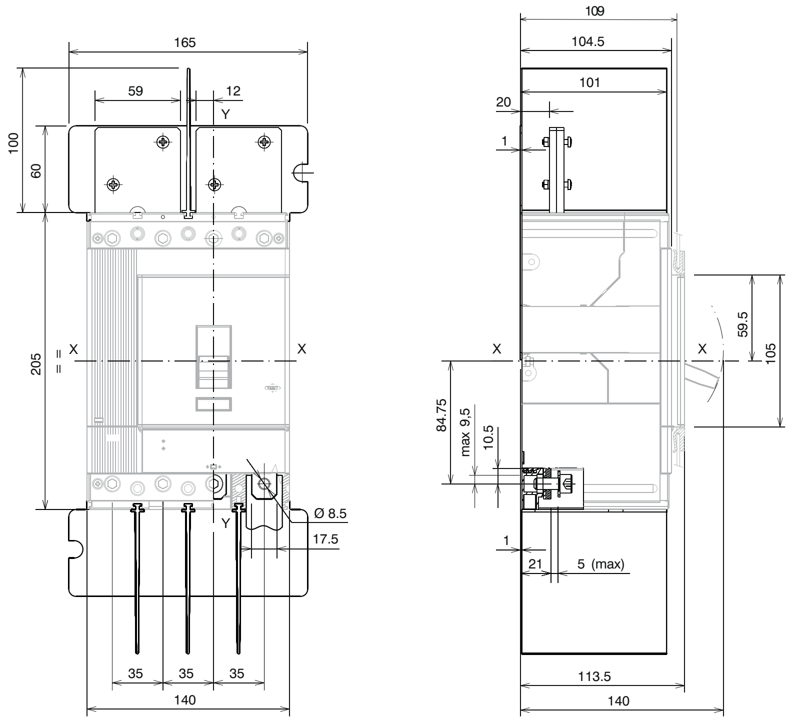
2PS+2PS solution, Lower Supply

			2PS+2PS			
			F	FCCu	FCCuAl 185mm²	EF
	UP TO 1100V	Availability for Lower supply	✓	✓	✓	✓
T4D/PV-E only	UP TO 1500V	Availability for Lower supply	✓	✓	✓	

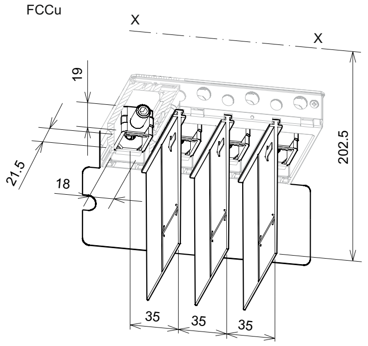


2PS+2PS
LOWER
SUPPLY

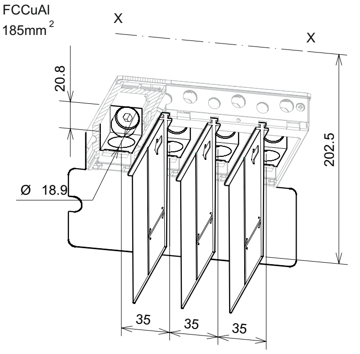
F



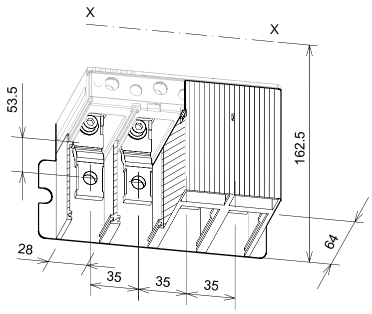
FCCu



FCCuAl
185mm²

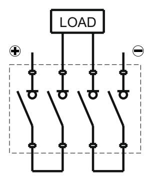


EF



2PS+2PS solution, Upper Supply

			2PS+2PS			
			F	FCCu	FCCuAl 185mm²	EF
	UP TO 1100V	Availability for Upper supply	✓	✓	✓	✓
T4D/PV-E only	UP TO 1500V	Availability for Upper supply	✓	✓	✓	

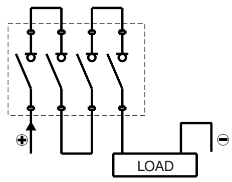


2PS+2PS
UPPER
SUPPLY

* Terminals configurations must be symmetrical with respect to x-x CB axis when CB is supplied from the top

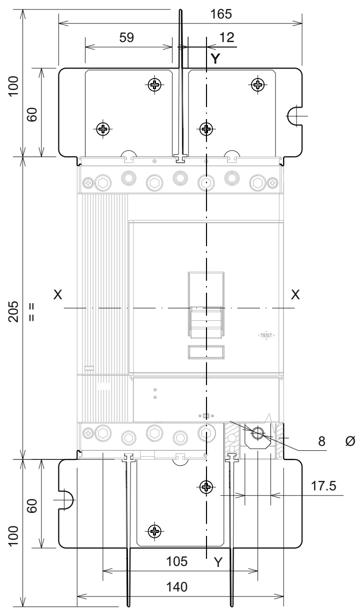
4PS solution, Lower Supply

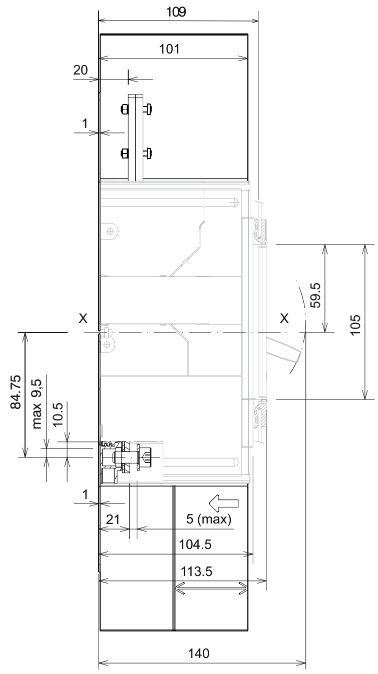
			2PS+2PS			
			F	FCCu	FCCuAl 185mm²	EF
	UP TO 1100V	Availability for Lower supply	✓	✓	✓	✓
T4D/PV-E only	UP TO 1500V	Availability for Lower supply	✓	✓	✓	



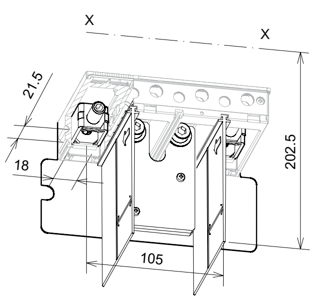
4PS
LOWER
SUPPLY

F

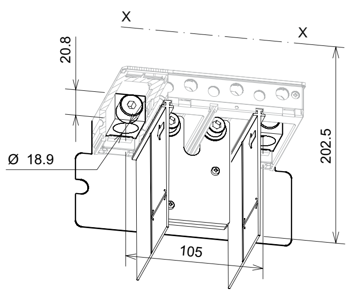




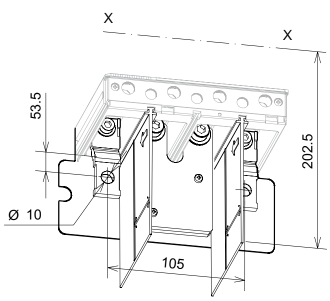
FCCu



FCCuAl 185mm²

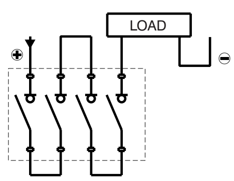


EF



2PS+2PS solution, Upper Supply

			2PS+2PS			
			F	FCCu	FCCuAl 185mm²	EF
	UP TO 1100V	Availability for Upper supply	✓	✓	✓	✓
T4D/PV-E only	UP TO 1500V	Availability for Upper supply	✓	✓	✓	



4PS
UPPER
SUPPLY

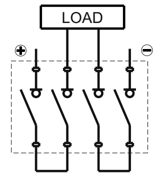
* Terminals configurations must be symmetrical with respect to x-x CB axis when CB is supplied from the top

Dimensions
T5D/PV

According to IEC 60947-3

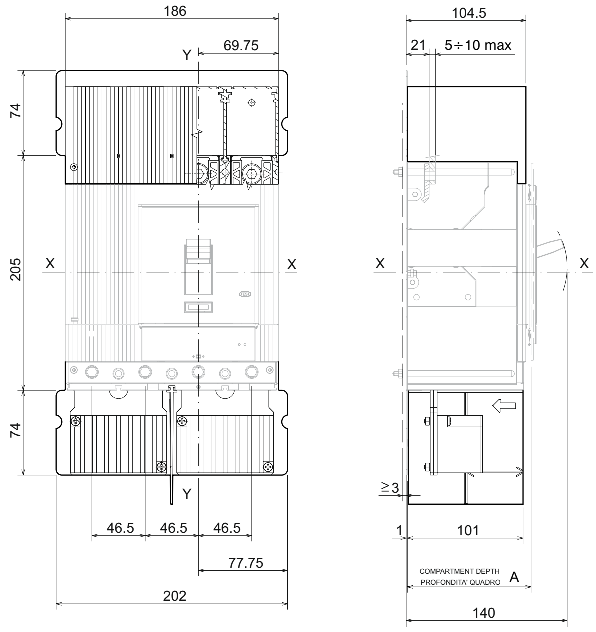
2PS+2PS solution, Upper Supply

	F	FCCu	EF
Availability for Upper supply	✓	✓	✓

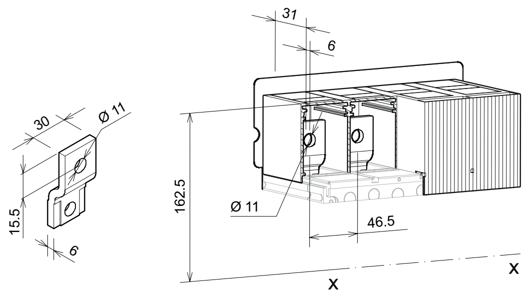


2PS+2PS
UPPER SUPPLY

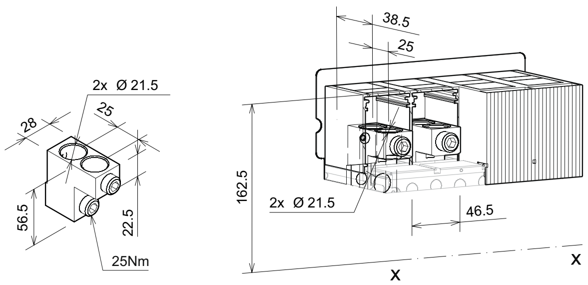
F



EF

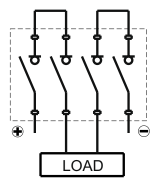


FCCu



2PS+2PS solution, Lower Supply

	F	FCCu	EF
Availability for Lower supply	✓	✓	✓

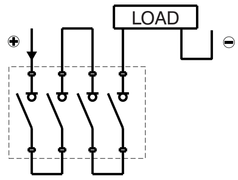


2PS+2PS
LOWER SUPPLY

* Terminals configurations must be symmetrical with respect to x-x CB axis when CB is supplied from the top

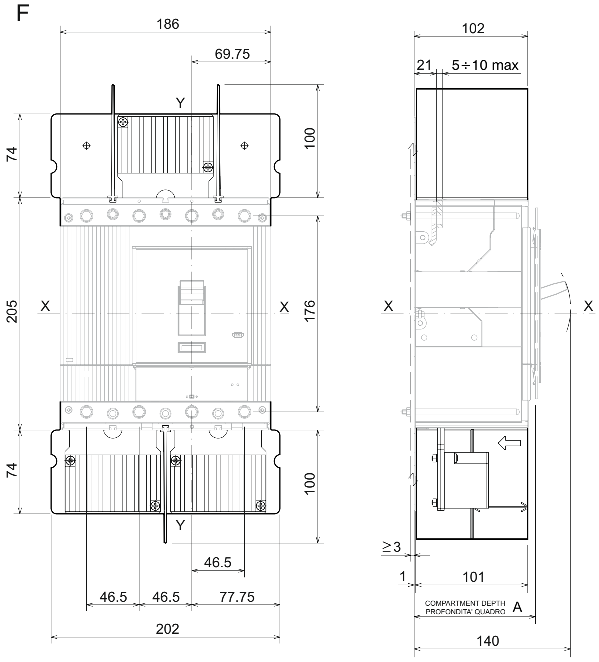
4PS solution, Upper Supply

	F	FCCu	EF
Availability for Upper supply	✓	✓	✓

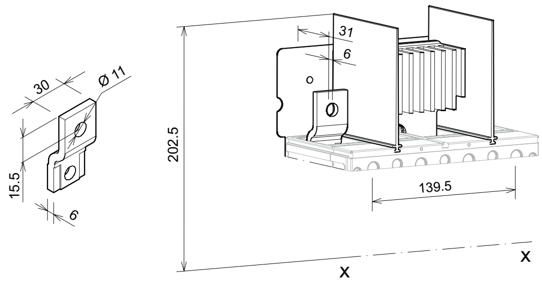


4PS
UPPER SUPPLY

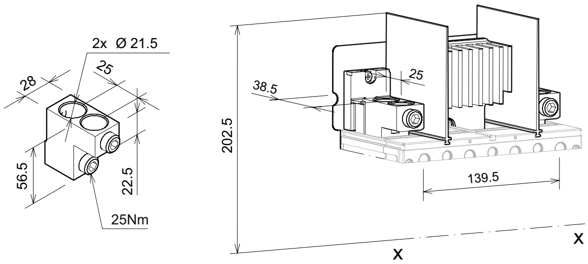
F



EF

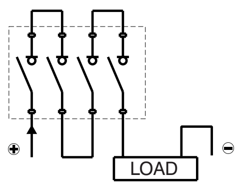


FCCu



4PS solution, Lower Supply

	F	FCCu	EF
Availability for Lower supply	✓	✓	✓



4PS
LOWER SUPPLY

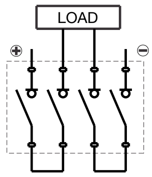
* Terminals configurations must be symmetrical with respect to x-x CB axis when CB is supplied from the top

Dimensions
T5D/PV-E

According to IEC 60947-3

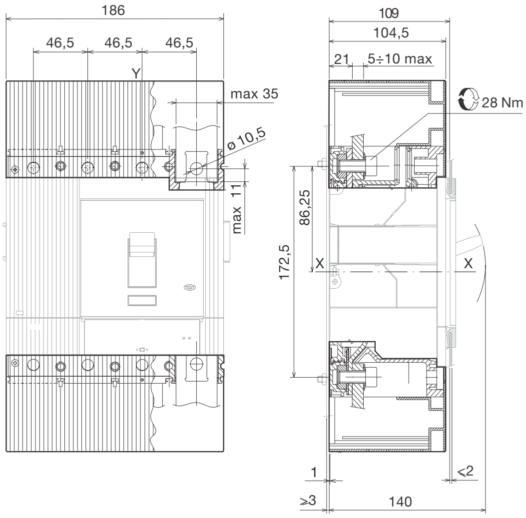
Configurations without jumpers

	F	FCCu
Availability for Upper supply ONLY	✓	✓

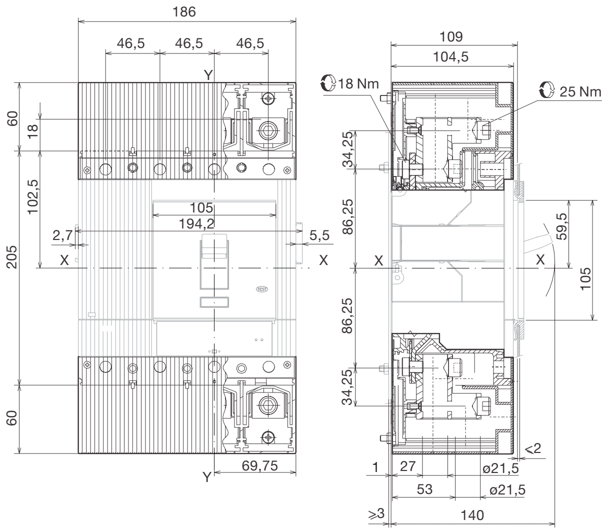


2PS+2PS
UPPER SUPPLY
ONLY

F

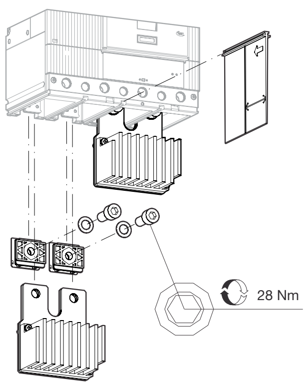


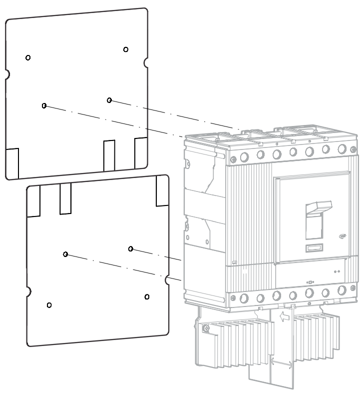
FC Cu



Jumper examples

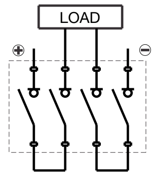
Example with jumper
(4PS Upper Supply)





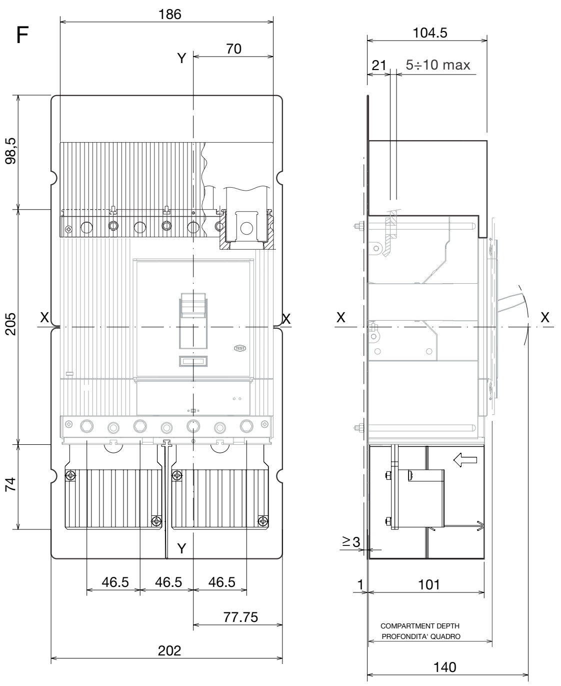
2PS+2PS solution, Upper Supply

	F	FCCu
Availability for Upper supply ONLY	✓	✓

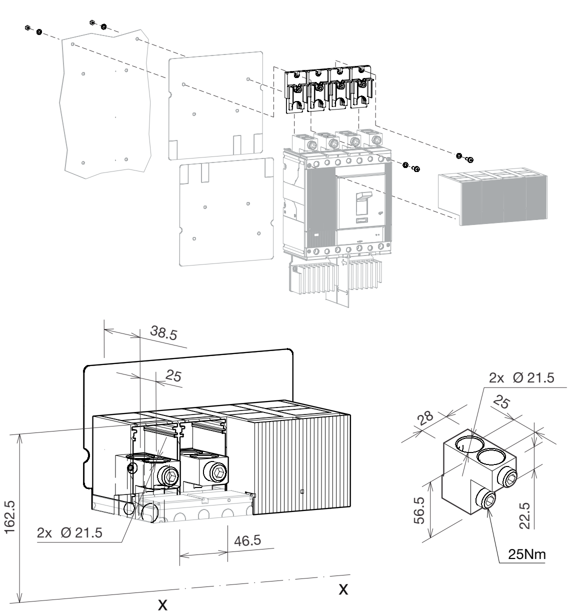


2PS+2PS
UPPER SUPPLY
ONLY

F



FCCu

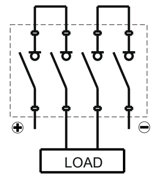


Dimensions
T6D/PV

According to IEC 60947-3

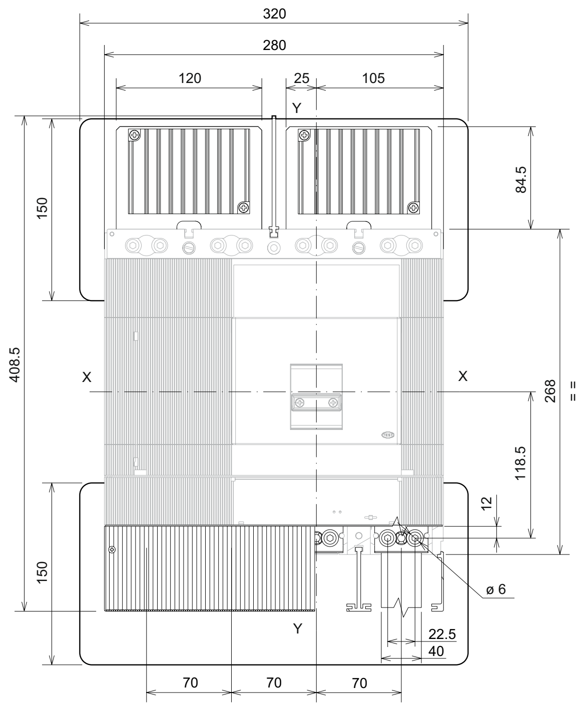
2PS+2PS solution, Lower Supply

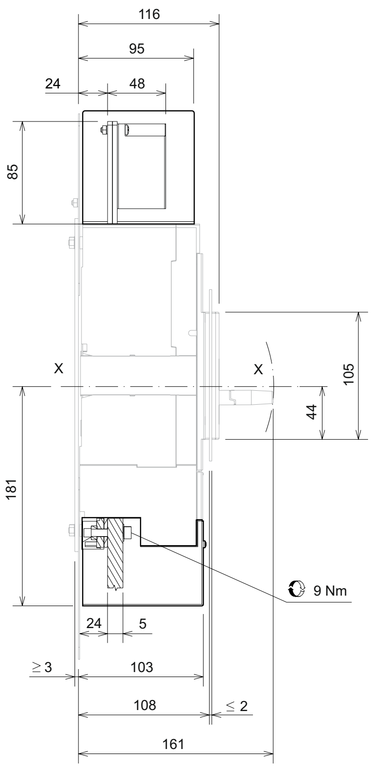
	F	FCCuAl	EF
Availability for Lower supply	✓	✓	✓



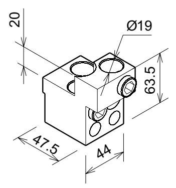
2PS+2PS
LOWER SUPPLY

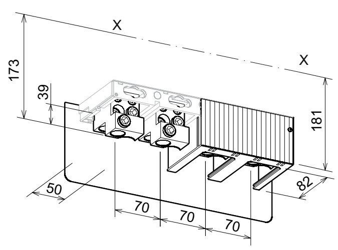
F



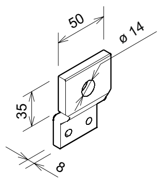


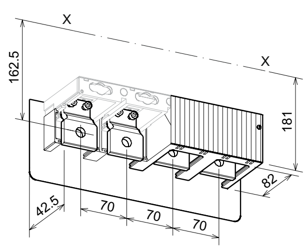
FCCuAl





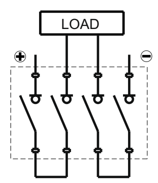
EF





2PS+2PS solution, Upper Supply

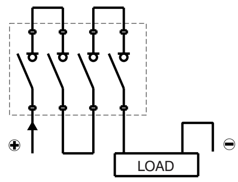
	F	FCCuAl
Availability for Upper supply	✓	✓



2PS+2PS
UPPER SUPPLY

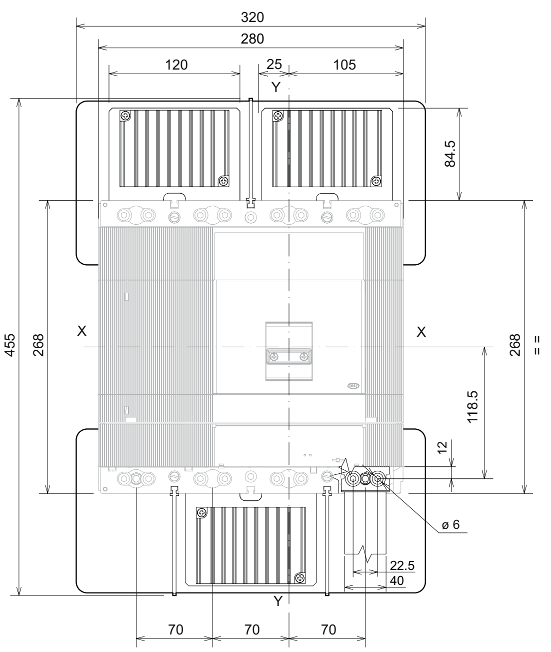
4PS solution, Lower Supply

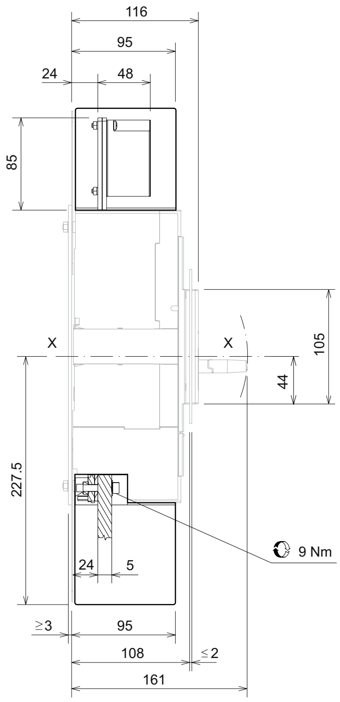
	F	FCCuAl	EF
Availability for Lower supply	✓	✓	✓



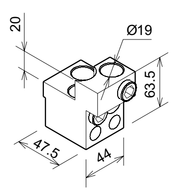
4PS
LOWER SUPPLY

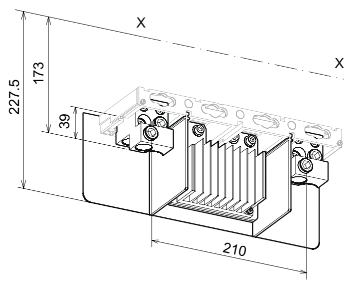
F



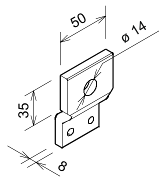


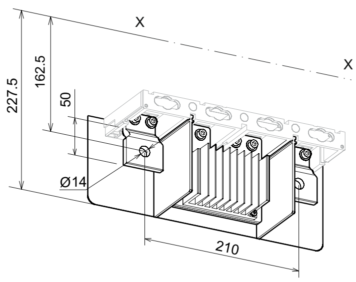
FCCuAl





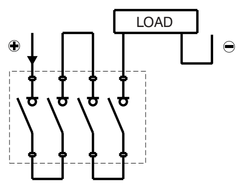
EF





4PS solution, Upper Supply

	F	FCCuAl
Availability for Upper supply	✓	✓

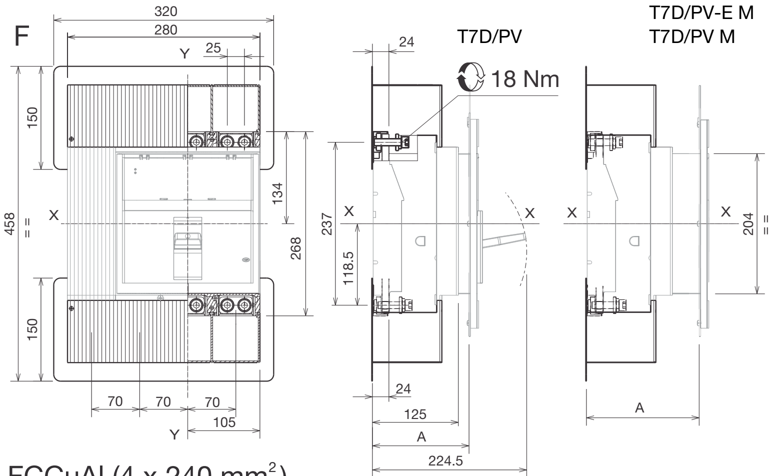


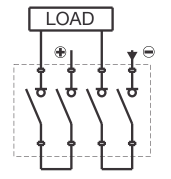
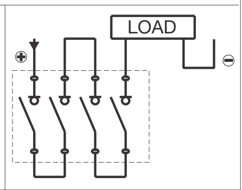
4PS
UPPER SUPPLY

Dimensions
T7D/PV

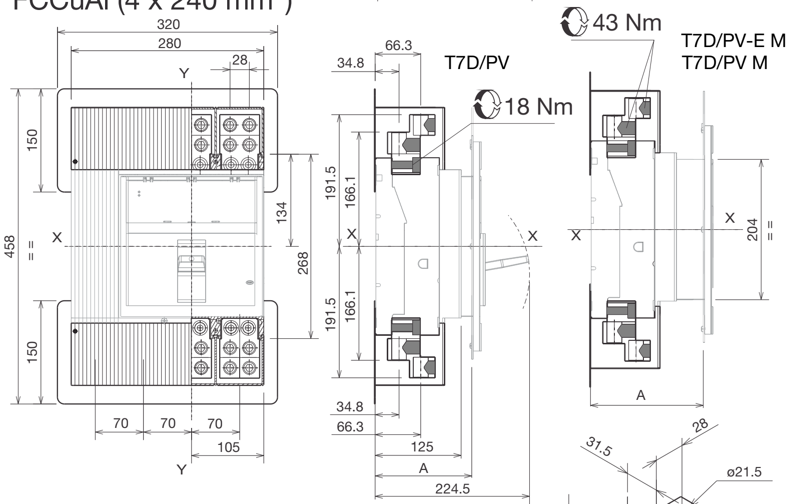
According to IEC 60947-3

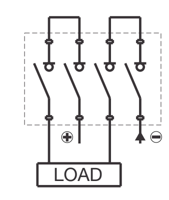
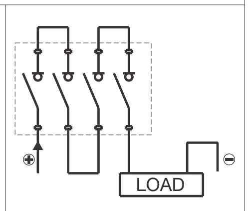
Configurations without jumpers



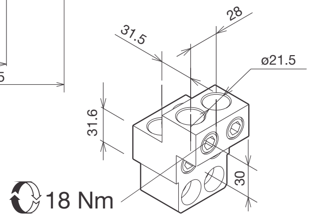
Availability for Upper Supply	
	
2PS+2PS	4PS
UP TO 1500V	UP TO 1100V

FCCuAl (4 x 240 mm^2)

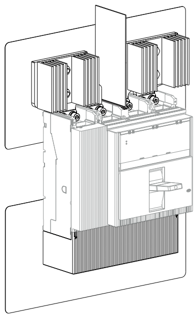


Availability for Lower Supply	
	
2PS+2PS	4PS
UP TO 1500V *	UP TO 1100V

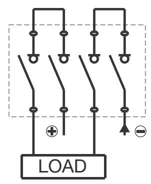
* if Un>1100V, only jumpers for 1250A can be used



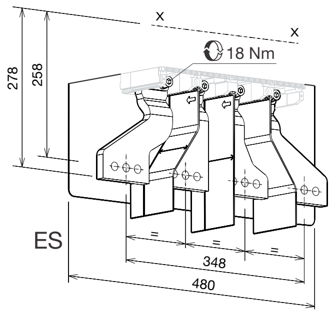
		CON MOSTRINA WITH FLANGE	SENZA MOSTRINA WITHOUT FLANGE
A	T7D/PV	141	147
	T7D/PV M T7D/PV-E M	164	170

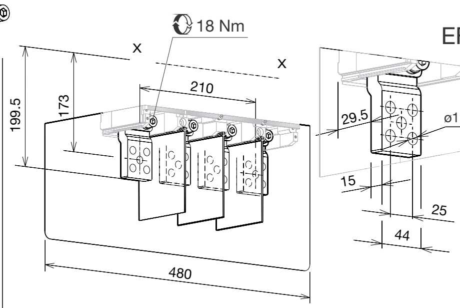


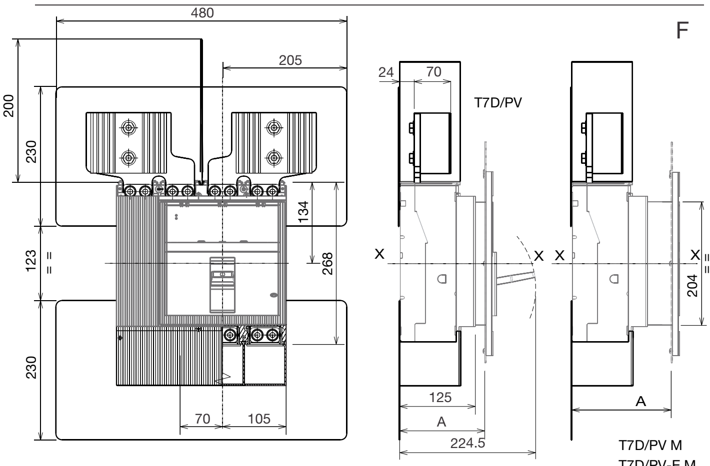
2PS+2PS
LOWER
SUPPLY



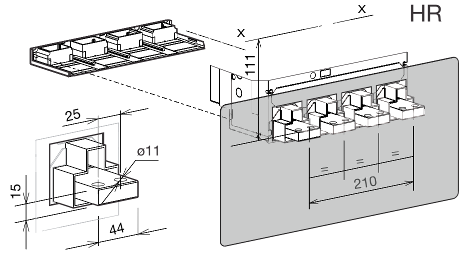
	Availability for Lower Supply						
	2PS+2PS						
	F	FCCuAl	EF	ES	HR	VR	
	✓	✓	✓	✓	✓	✓	UP TO 1100V
	✓	✓	☐	☐	☐	☐	UP TO 1500V; T7D/PV-E M ONLY

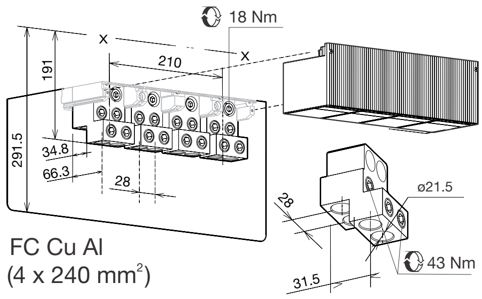






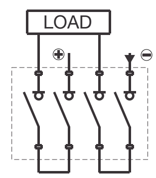
		CON MOSTRINA WITH FLANGE	SENZA MOSTRINA WITHOUT FLANGE
A	T7D/PV	141	147
	T7D/PV M T7D/PVE- M	164	170





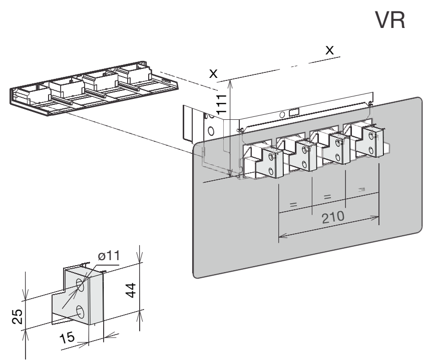
FC Cu Al
(4 x 240 mm^2)

2PS+2PS solution, Upper Supply



	Availability for Upper Supply *			2PS+2PS UPPER SUPPLY
	2PS+2PS			
	F	FCCuAl	EF	
	✓	✓	✓	UP TO 1100V
	✓	✓	☐	UP TO 1500V; T7D/PV-E M ONLY

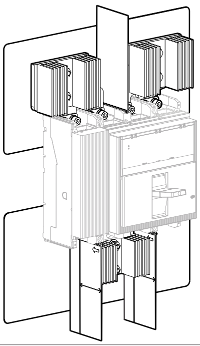
* Terminals configurations must be symmetrical with respect to x-x CB axis when CB is supplied from the top



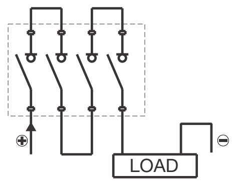
Dimensions
T7D/PV

According to IEC 60947-3

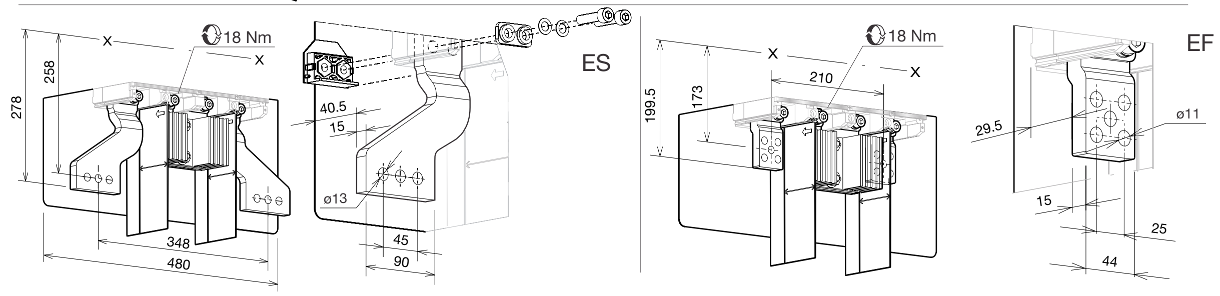
4PS solution, Lower Supply

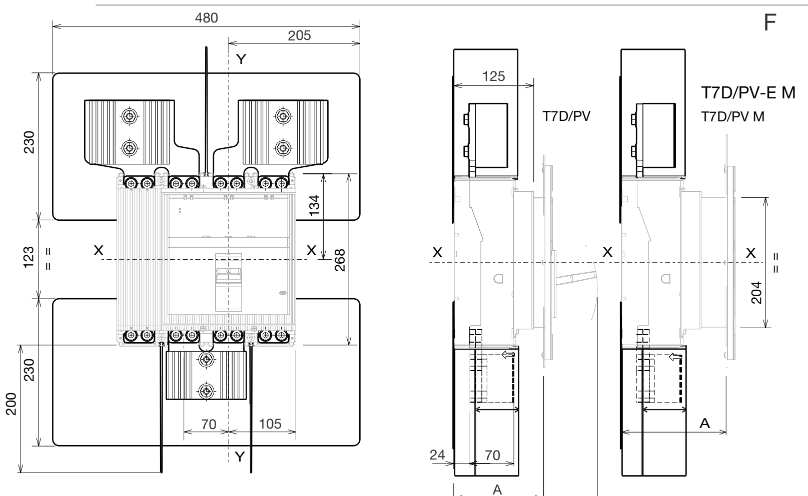


4PS LOWER SUPPLY

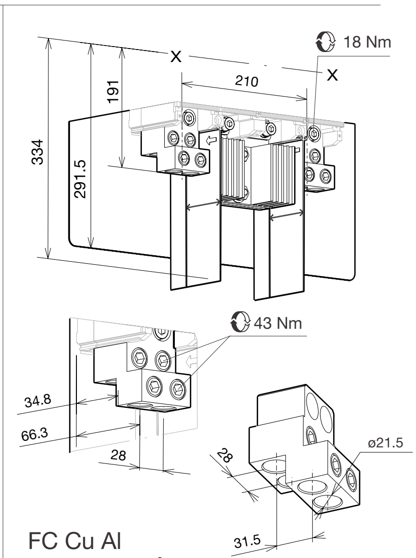


Availability for Lower Supply				
4PS				
F	FCCuAl	EF	ES	
✓	✓	✓	✓	UP TO 1100V





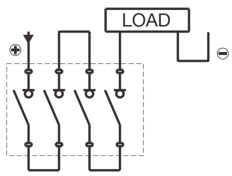
		CON MOSTRINA WITH FLANGE	SENZA MOSTRINA WITHOUT FLANGE
A	T7D/PV	141	147
	T7D/PV M T7D/PV-E M	164	170



FC Cu Al
(4 x 240 mm^2)

4PS solution, Upper Supply

4PS UPPER SUPPLY



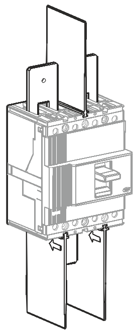
Availability for Upper Supply *		
4PS		
F	EF	
✓	✓	UP TO 1100V

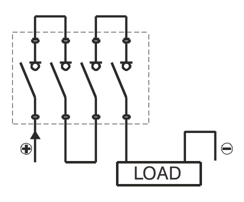
* Terminals configurations must be symmetrical with respect to x-x CB axis when CB is supplied from the top

Dimensions
T1/PV

According to UL 489B

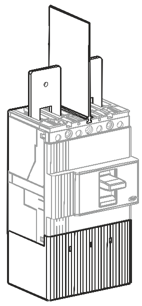
Jumper Kit T1N-D/PV-A for connection A
grounded system wiring 4PS, lower supply

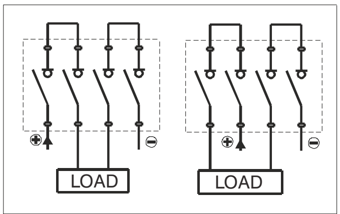




Connection A 4PS	
	FCCu
Availability for Lower supply	✓

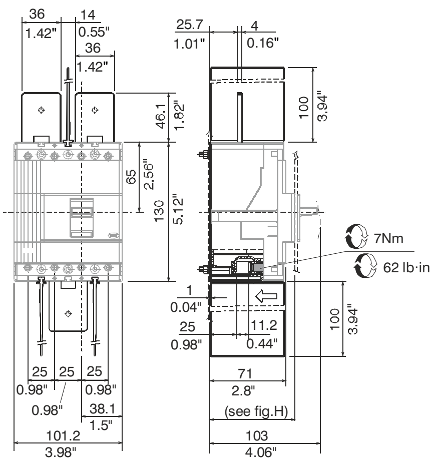
Jumper Kit T1N-D/PV-B for connection B
ungrounded system wiring 2PS+2PS, lower supply



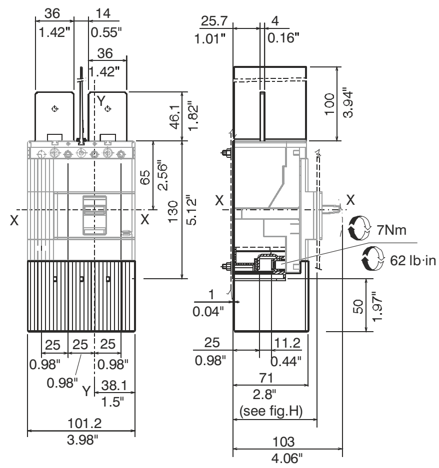


Connection B 2PS+2PS	
	FCCu
Availability for Lower supply	✓

4PS
LOWER
SUPPLY



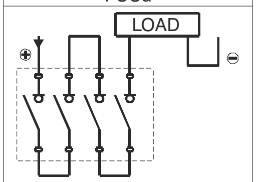
2PS+2PS
LOWER
SUPPLY



Jumper Kit T1N-D/PV-A for connection A
grounded system wiring 4PS, upper supply

4PS
UPPER
SUPPLY

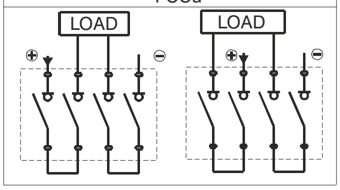
	Connection A 4PS
Availability for Upper supply*	✓
	FCCu



Jumper Kit T1N-D/PV-B for connection B
ungrounded system wiring 2PS+2PS, upper supply

2PS+2PS
UPPER
SUPPLY

	Connection B 2PS+2PS
Availability for Upper supply*	✓
	FCCu



* Terminals configurations must be symmetrical with respect to x-x CB axis when CB is supplied from the top.

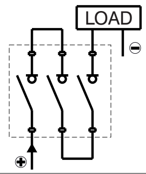
Dimensions
T4/PV

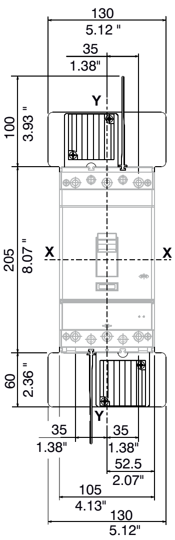
According to UL 489B

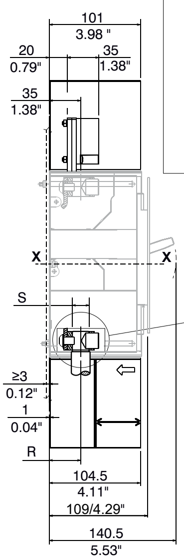
Jumper Kit T4N/PV-A for connection A
grounded system wiring 3PS, lower supply

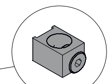
3PS
LOWER SUPPLY

	Connection A 3PS	
Availability for Lower supply	✓	✓
	50mm^2	185mm^2
	FCCuAl	







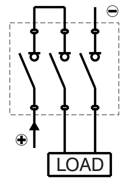


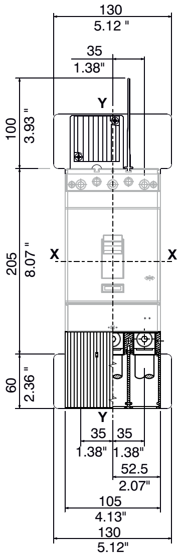
	50 mm^2	185 mm^2
	40÷100A	125÷200A
R	31 1.22"	35 1.38"
S	10 0.4"	18.85 0.75"

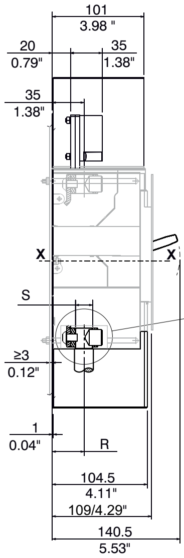
Jumper Kit T4N/PV-B for connection B
ungrounded system wiring 2PS+1, lower supply

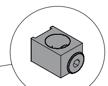
2PS+1
LOWER SUPPLY

	Connection B 2PS+1	
Availability for Lower supply	✓	✓
	50mm^2	185mm^2
	FCCuAl	



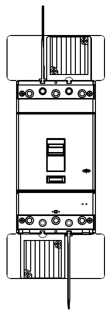






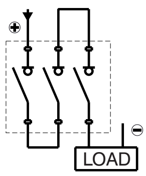
	50 mm^2	185 mm^2
	40÷100A	125÷200A
R	31 1.22"	35 1.38"
S	10 0.4"	18.85 0.75"

Jumper Kit T4N/PV-A for connection A
grounded system wiring 3PS, upper supply



	Connection A 3PS
Availability for Upper supply	✓
	FCCuAl

3PS
UPPER
SUPPLY



Terminals configurations must be symmetrical with respect to x-x CB axis when CB is supplied from the top

Jumper Kit T4N/PV-B for connection B
ungrounded system wiring 2PS+1, upper supply

2PS+1 UPPER SUPPLY
NOT AVAILABLE

The configurations here represented are the only ones available.

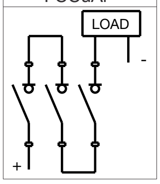
Dimensions
T5/PV

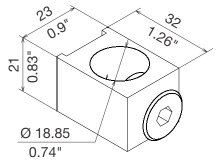
According to UL 489B

Busbar Jumper FCCu Kit T5N/PV UL-A for connection A
grounded system wiring 3PS, lower supply 225A

	3PS
Availability for Lower supply	✓
	FCCuAl

3PS
LOWER
SUPPLY

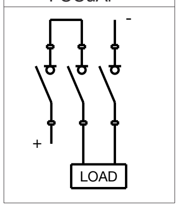


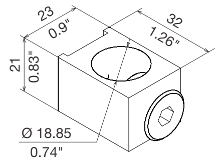


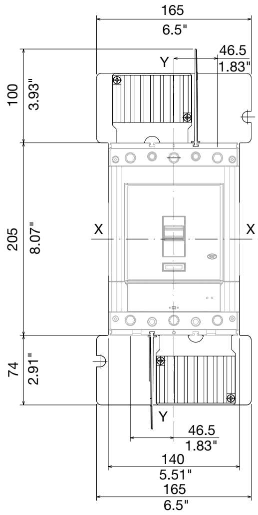
Busbar Jumper FCCu Kit T5N/PV UL-B for connection B
ungrounded system wiring 2PS+1PS, lower supply 225A

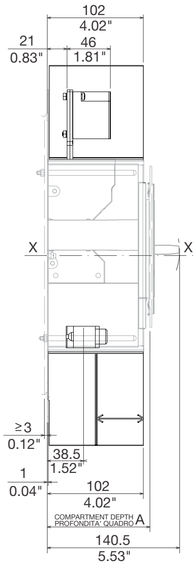
	2PS+1PS
Availability for Lower supply	✓
	FCCuAl

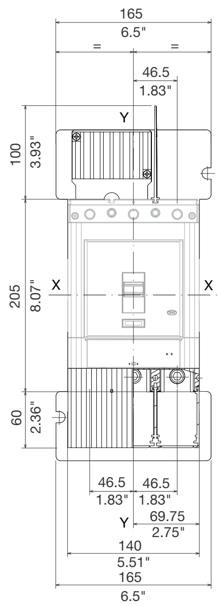
2PS+1PS
LOWER
SUPPLY

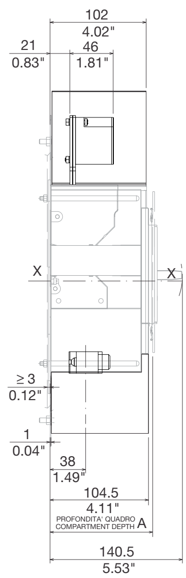




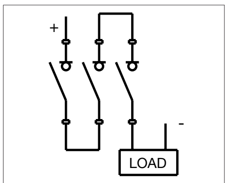








3PS
UPPER
SUPPLY



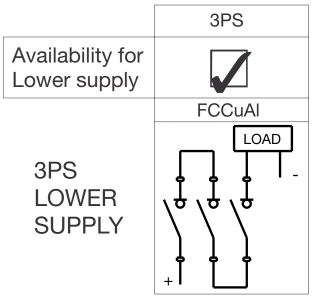
	3PS
Availability for Upper supply	✓
	FCCu

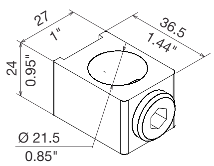
UPPER SUPPLY
NOT AVAILABLE

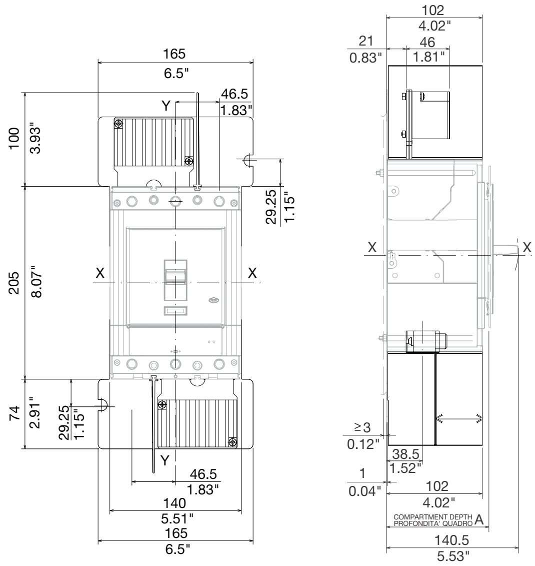
Dimensions
T5/PV

According to UL 489B

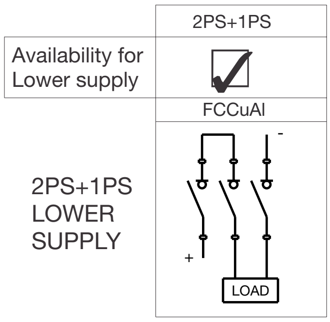
Busbar Jumper FCCu Kit T5N/PV UL-A for connection A
grounded system wiring 3PS, lower supply 250A

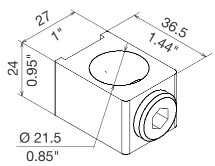


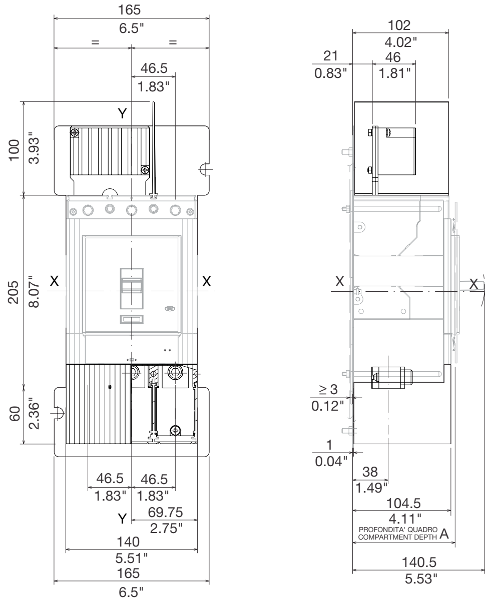


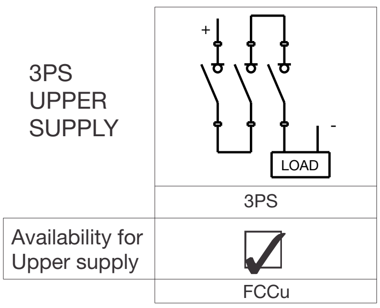


Busbar Jumper FCCu Kit T5N/PV UL-B for connection B
ungrounded system wiring 2PS+1PS, lower supply 250A



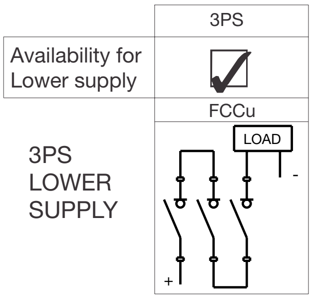


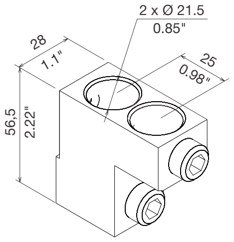


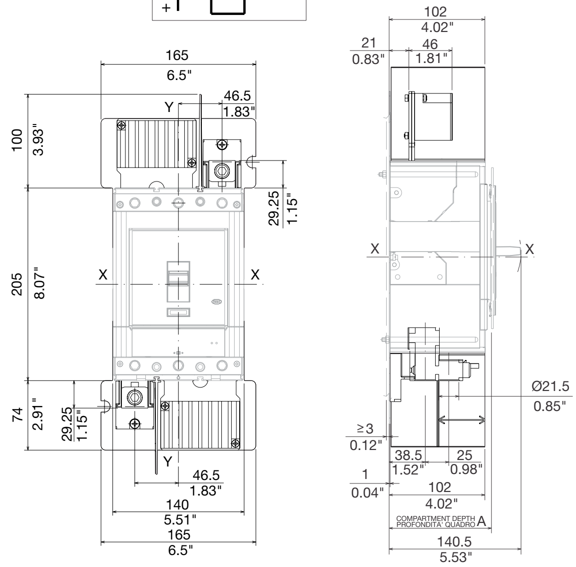


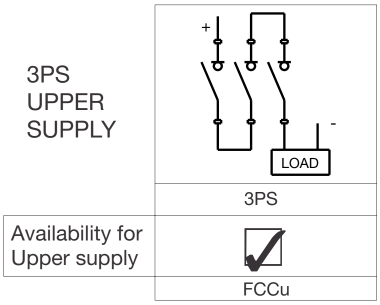
UPPER SUPPLY
NOT AVAILABLE

Busbar Jumper FCCu Kit T5N/PV UL-A for connection A
grounded system wiring 3PS, lower supply 300A-400A

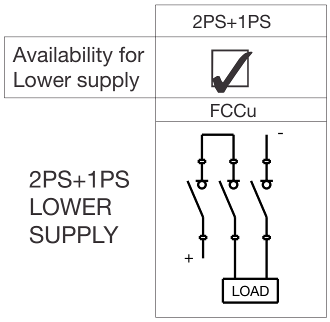


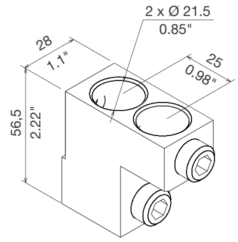


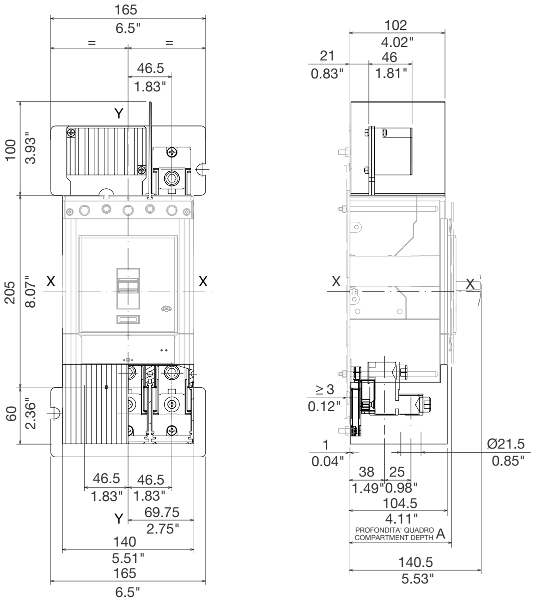




Busbar Jumper FCCu Kit T5N/PV UL-B for connection B
ungrounded system wiring 2PS+1PS, lower supply 300A-400A





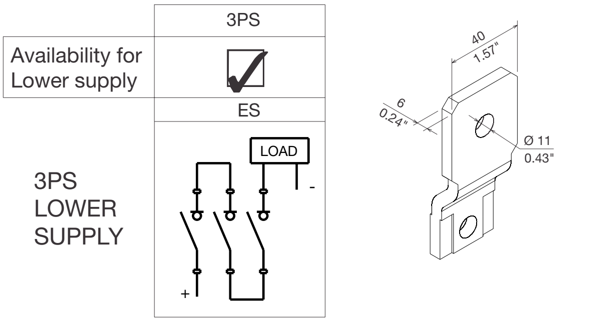


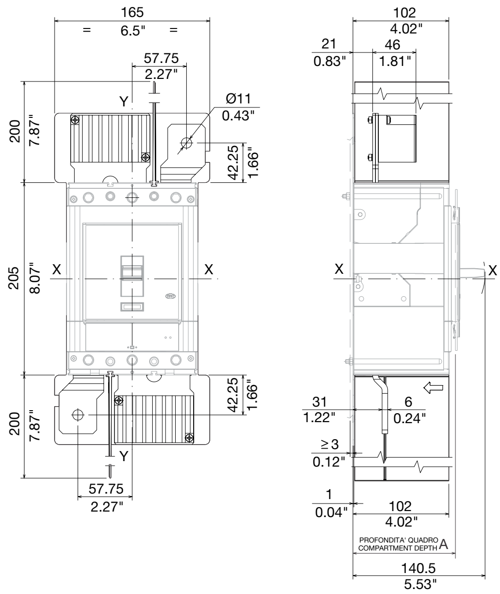
UPPER SUPPLY
NOT AVAILABLE

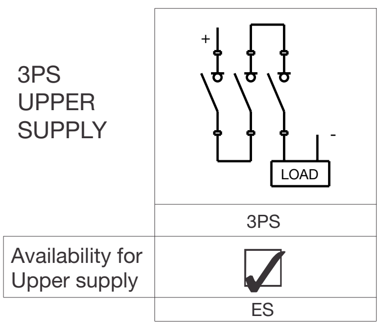
Dimensions
T5/PV

According to UL 489B

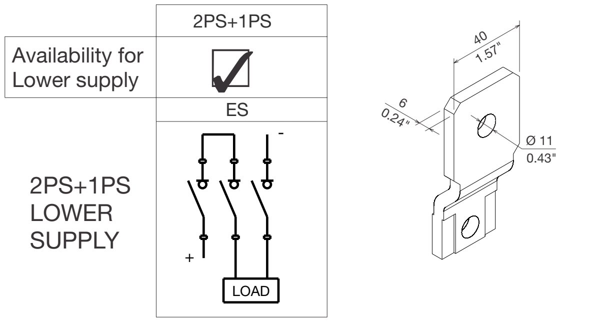
Busbar Jumper ES Kit T5N/PV UL-A for connection A
grounded system wiring 3PS, lower supply 400A

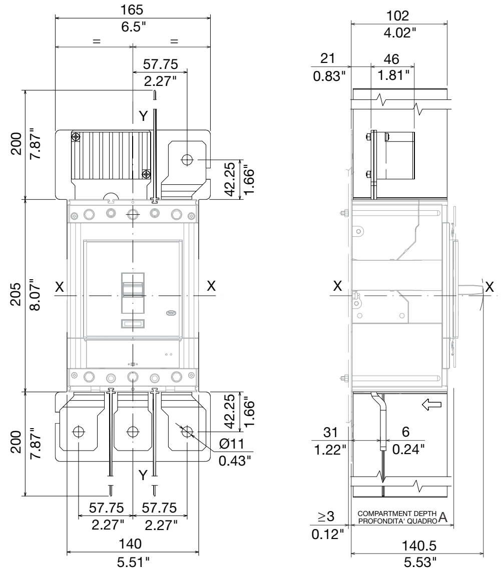


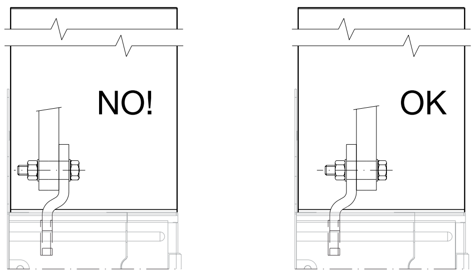




Busbar Jumper ES Kit T5N/PV UL-B for connection B
ungrounded system wiring 2PS+1PS, lower supply 400A





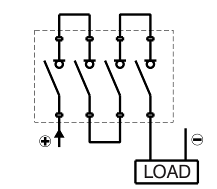


UPPER SUPPLY
NOT AVAILABLE

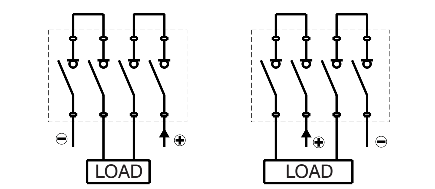
Dimensions
T6/PV 600A

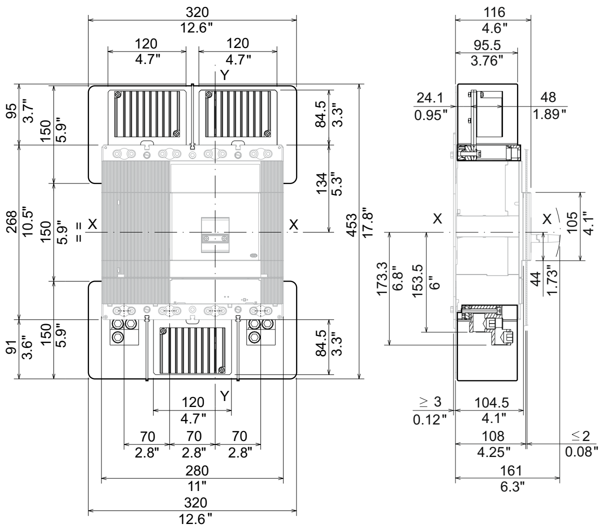
According to UL 489B

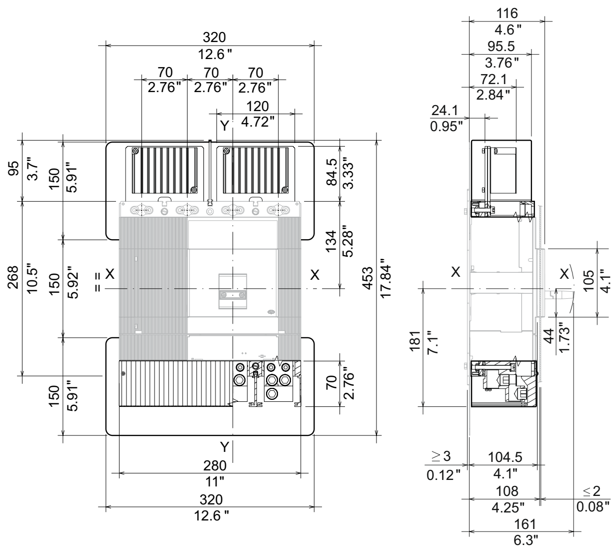
Jumper Kit T6N/PV-A for connection A
grounded system wiring 4PS, lower supply

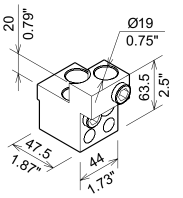
	4PS
Availability for Lower supply	✓
	FCCuAl
4PS LOWER SUPPLY	

Jumper Kit T6N/PV-B for connection B
ungrounded system wiring 2PS+2PS, lower supply

	2PS+2PS
Availability for Lower supply	✓
	FCCuAl
2PS+2PS LOWER SUPPLY	

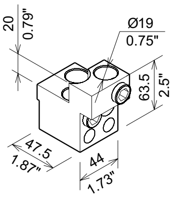






600A
3x300 Kcmil

UPPER SUPPLY
NOT AVAILABLE



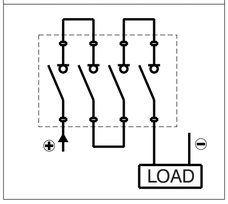
600A
3x300 Kcmil

UPPER SUPPLY
NOT AVAILABLE

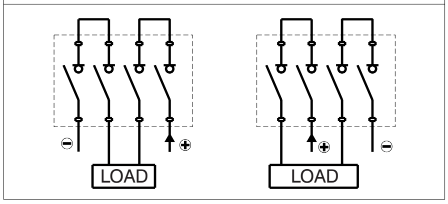
Dimensions
T6/PV 800A

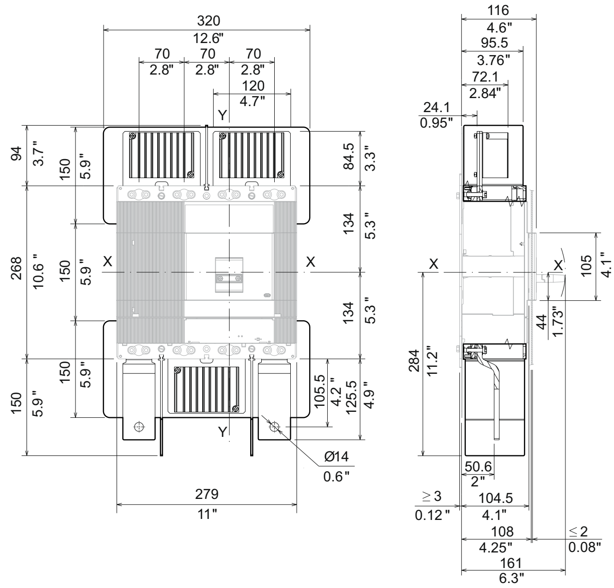
According to UL 489B

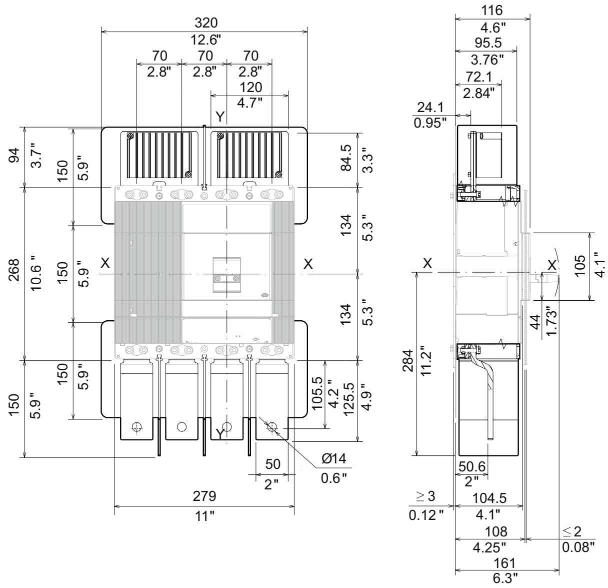
4PS solution, terminals for Lower Supply

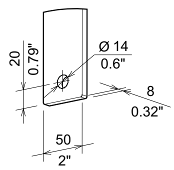
	4PS
Availability for Lower supply	✓
	EF
4PS LOWER SUPPLY	

2PS+2PS solutions, terminals for Lower Supply

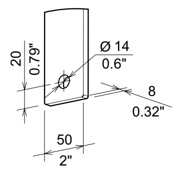
	2PS+2PS
Availability for Lower supply	✓
	EF
2PS+2PS LOWER SUPPLY	







UPPER SUPPLY
NOT AVAILABLE



UPPER SUPPLY
NOT AVAILABLE

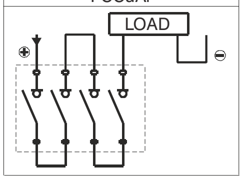
Dimensions
T7/PV

According to UL 489B

Jumper Kit T7N-D/PV-A for connection A grounded system wiring 4PS, upper supply

	Connection A 4PS
Availability for Upper supply	✓
	FCCuAl

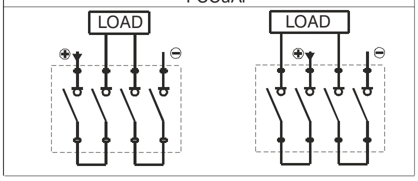
4PS UPPER SUPPLY



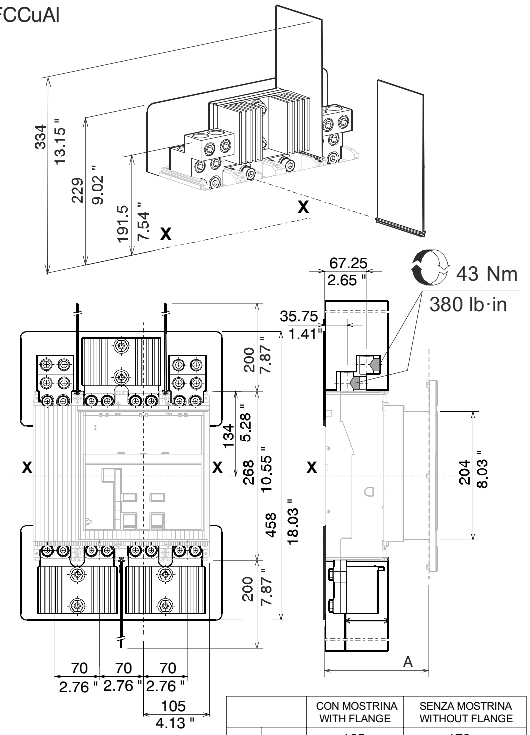
Jumper Kit T7N-D/PV-B for connection B ungrounded system wiring 2PS+2PS, upper supply

	Connection B 2PS+2PS
Availability for Upper supply	✓
	FCCuAl

2PS+2PS UPPER SUPPLY

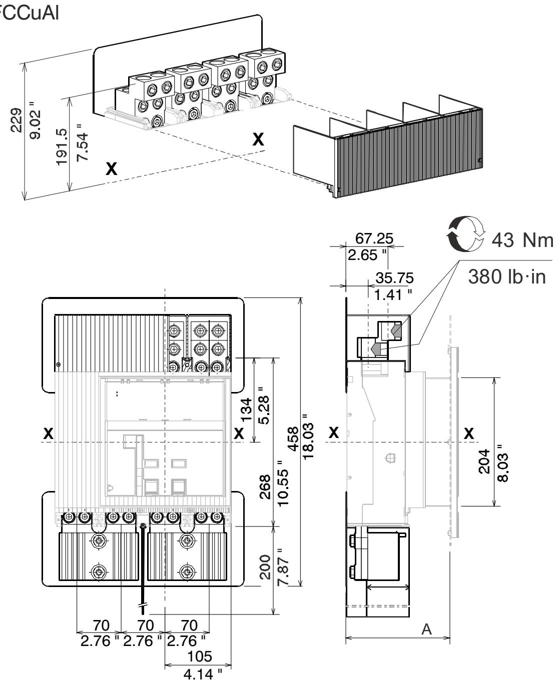


FCCuAl



		CON MOSTRINA WITH FLANGE	SENZA MOSTRINA WITHOUT FLANGE
A	mm	165	170
	in	6.50"	6.69"

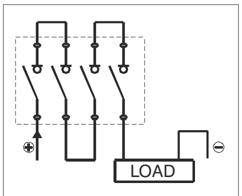
FCCuAl



		CON MOSTRINA WITH FLANGE	SENZA MOSTRINA WITHOUT FLANGE
A	mm	165	170
	in	6.50"	6.69"

Jumper Kit T7N-D/PV-A for connection A grounded system wiring 4PS, lower supply

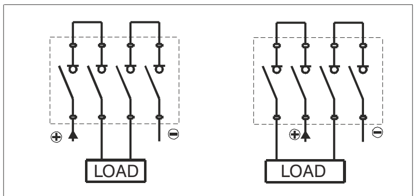
4PS LOWER SUPPLY



	Connection A 4PS
	FCCuAl
Availability for Lower supply*	✓

Jumper Kit T7N-D/PV-B for connection B ungrounded system wiring 2PS+2PS, lower supply

2PS+2PS LOWER SUPPLY



	Connection B 2PS+2PS
	FCCuAl
Availability for Lower supply*	✓

* Terminals configurations must be symmetrical with respect to x-x CB axis when CB is supplied from below.

Codes

Tmax PV IEC 1100V & 1500V switch-disconnectors

Breakers

Code	Description
1SDA069816R1	T1D/PV 160 4p F FC Cu 1100V DC
1SDA069822R1	T3D/PV 200 4p F FC Cu 1100V DC
1SDA069823R1	T4D/PV 250 4p F F 1100V DC
1SDA069824R1	T5D/PV 500 4p F F 1100V DC
1SDA069825R1	T6D/PV 800 4p F F 1100V DC
1SDA069826R1	T7D/PV 1250 4p F F 1100V DC
1SDA069827R1	T7D/PV 1250 4p F F M 1100V DC
1SDA069828R1	T7D/PV 1600 4p F F 1100V DC
1SDA069829R1	T7D/PV 1600 4p F F M 1100V DC
1SDA073559R1	T4D/PV-E 250 4p F F 1500V DC
1SDA076898R1	T5D/PV-E 500 4p FF 1500V DC
1SDA073560R1	T7D/PV-E 1250 4p F F M 1500V DC
1SDA073561R1	T7D/PV-E 1600 4p F F M 1500V DC

Kit Jumpers

Code	Description
1SDA069876R1	KIT 2 JUMPER 2+2PS T1D/PV 160 4p
1SDA069877R1	KIT 3 JUMPER 4PS T1D/PV 160 4p
1SDA076162R1	KIT 2JUMPER U 2+2PS T3D/PV 200
1SDA076163R1	KIT 3JUMPER U 4PS T3D/PV 200
1SDA070454R1	KIT 2JUMPER U 2+2PS T4D/PV 250
1SDA070455R1	KIT 3JUMPER U 4PS T4D/PV 250
1SDA070456R1	KIT 2JUMPER U 2+2PS T5D/PV 500
1SDA070457R1	KIT 3JUMPER U 4PS T5D/PV 500
1SDA076899R1	KIT 2JUMPER U 2+2PS T5D/PV-E 500 1500V DC
1SDA070491R1	KIT 2JUMPER U 2+2PS T6D/PV 800
1SDA070492R1	KIT 3JUMPER U 4PS T6D/PV 800
1SDA070429R1	KIT JUMPER U 2+2PS T7D/PV 1250
1SDA070431R1	KIT JUMPER U 2+2PS T7D/PV 1600
1SDA070430R1	KIT JUMPER U 4PS T7D/PV 1250
1SDA070432R1	KIT JUMPER U 4PS T7D/PV 1600

Tmax PV can be accessoried with Tmax series accessories, except for the following exceptions:

Frame size	Incompatibilities
T1D PV	Interlocks, KLC, PLL
T3D PV	Interlocks, KLC, PLL
T4D PV	Interlocks
T5D PV	Interlocks
T6D PV	Interlocks
T7D PV	Interlocks
T7D PV M	Interlocks

Accessories part number, wirings and data can be found in the Tmax IEC Technical Catalogue and Tmax UL489 Technical Catalogue.

Tmax PV UL489B 1000V switch-disconnectors & automatic circuit-breakers

Breakers

Code	Description
1SDA070004R1	T1N-D/PV 100 MCS UL 4p F FC Cu 1000V DC
1SDA070460R1	T4N-D/PV 200 MCS UL 3p F F 1000V DC
1SDA070461R1	T4N/PV 200 UL TMD 40 3p F F 1000V DC
1SDA070462R1	T4N/PV 200 UL TMD 50 3p F F 1000V DC
1SDA070463R1	T4N/PV 200 UL TMA 80-800 3p F F 1000V DC
1SDA070467R1	T4N/PV 200 UL TMA 100-1000 3p FF 1000V DC
1SDA070468R1	T4N/PV 200 UL TMA 125-1250 3p FF 1000V DC
1SDA070469R1	T4N/PV 200 UL TMA 150-1500 3p FF 1000V DC
1SDA070470R1	T4N/PV 200 UL TMA 200-2000 3p FF 1000V DC
1SDA079819R1	T5N/PV 250 UL TMD 1500-3000 3p FF 1000V DC
1SDA079820R1	T5N/PV 225 UL TMD 1500-3000 3p FF 1000V DC
1SDA079818R1	T5N/PV 300 UL TMD 1500-3000 3p FF 1000V DC
1SDA070472R1	T5N/PV 400 UL TMA 400-4000 3p FF 1000V DC
1SDA070471R1	T5N-D/PV 400 MCS UL 3p F 1000V DC
1SDA070493R1	T6N-D/PV 600 MCS UL 4p F F 1000V DC
1SDA070494R1	T6N-D/PV 800 MCS UL 4p F F 1000V DC
1SDA070495R1	T6N/PV 800 UL TMA 600-6000 4p FF 1000V DC
1SDA070496R1	T6N/PV 800 UL TMA 800-8000 4p FF 1000V DC
1SDA070448R1	T7N-D/PV 1000 MCS UL 4p F F M 1000V DC

Kit Jumpers

Code	Description
1SDA070424R1	KIT 2 JUMPER 2+2PS T1N-D/PV-B 100 UL 4p
1SDA070425R1	KIT 3 JUMPER 4PS T1N-D/PV-A 100 UL 4p
1SDA070483R1	KIT 1 JUMPER 2+1PS T4N/PV-B 100A UL 3p
1SDA070484R1	KIT 1 JUMPER 2+1PS T4 PV-B 200A UL 3p
1SDA070485R1	KIT 2 JUMPER 3PS T4N/PV-A 100A UL 3p
1SDA070486R1	KIT 2 JUMPER 3PS T4 PV-A 200A UL 3p
1SDA070487R1	KIT 1 JUMPER 2+1PS T5 PV-B 400 UL 3p cables
1SDA070488R1	KIT 2 JUMPER 3PS T5 PV-A 400 UL 3p cables
1SDA074504R1	KIT 1 JUMPER 2+1PS T5 PV-B 400 UL 3p busbars
1SDA074505R1	KIT 2 JUMPER 3PS T5 PV-A 400 UL 3p busbars
1SDA079821R1	KIT 1 JUMPER 2+1PS T5 PV-B 225 UL 3p
1SDA079823R1	KIT 1 JUMPER 2+1PS T5 PV-B 250 UL 3p
1SDA079824R1	KIT 2 JUMPER 3PS T5 PV-A 225 UL 3p
1SDA079825R1	KIT 2 JUMPER 3PS T5 PV-A 250 UL 3p
1SDA070499R1	KIT 2 JUMPER 2+2PS T6 PV-B 600 UL 4p
1SDA070500R1	KIT 3 JUMPER 4PS T6 PV-A 600 UL 4p
1SDA070501R1	KIT 2 JUMPER 2+2PS T6 PV-B 800 UL 4p
1SDA070502R1	KIT 3 JUMPER 4PS T6 PV-A 800 UL 4p
1SDA070451R1	KIT 2 JUMPER 2+2PS T7N-D/PV-B 1000 UL 4p
1SDA070452R1	KIT 3 JUMPER 4PS T7N-D/PV-A 1000 UL 4p

Tmax PV can be accessoried with Tmax series accessories, except for the following exceptions:

Frame size	Incompatibilities
T1D PV	Interlocks, KLC, PLL
T3D PV	Interlocks, KLC, PLL
T4D PV	Interlocks
T5D PV	Interlocks
T6D PV	Interlocks
T7D PV	Interlocks
T7D PV M	Interlocks

Accessories part number, wirings and data can be found in the Tmax IEC Technical Catalogue and Tmax UL489 Technical Catalogue.

Contact us

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1SDC210054D0202 - 2014.11