

Overview of trip units

Susol

On Susol circuit breakers, the thermal-magnetic and electronic trip units are interchangeable and may be rapidly fitted to the circuit breakers.

It is therefore easy to change the protection of a given circuit following a modification in an installation. On TS400 and 630 circuit breakers, the electronic trip units are interchangeable plug-in modules. Trip unit ETM offers a large number of protection settings.

Each Trip devices has different types of protection depending on the associated trip unit:

- Standard protection
- Protection of networks supplied by line distribution
- Protection of long cables
- Protection of DC networks
- Protection of motor-starters
- Service connection circuit breaker (for special subscriber contracts)

Susol TD100, TD160 circuit breakers may be equipped with either FTU or FMU.

The trip units are not interchangeable types and can be supplied only after fixed with circuit breakers.

Ampere ratings

MCCB frame type		Rated current, In[A]						
	Type of trip unit	Thermal magnetic release				Electronic release		DSU
		FTU	FMU	ATU	MTU	ETS	ETM	
TE100	Built in unit	16, 20, 25, 32, 40, 50, 63, 80, 100	16, 20, 25, 32, 40, 50, 63, 80, 100	-	-	-	-	-
TD100								
TE160		100, 125, 160	100, 125, 160	-	-	-	-	160
TD160								
TS100	Inter changeable trip unit	40, 50, 63, 80, 100	40, 50, 63, 80, 100	-	1.6, 3.2, 6.3, 12, 20, 32, 50, 63, 100	40, 80	-	100
TS160		100, 125, 160	100, 125, 160	125, 160	32, 50, 63, 100, 160	40, 80, 160	-	160
TS250		125, 160, 200, 250	125, 160, 200, 250	125, 160, 200, 250	100, 160, 220	40, 80, 160, 250	-	250
TS400		300, 400	300, 400	300, 400	320	160, 250, 400	160, 250, 400	400
TS630		500, 630	500, 630	500, 630	500	160, 250, 400, 630	160, 250, 400, 630	630
TS800		700, 800	800	800	630	630, 800	630, 800	800

Types of trip units

FTU	• Fixed thermal, Fixed magnetic
FMU	• Adjustable thermal, Fixed magnetic
ATU	• Adjustable thermal, Adjustable magnetic
MTU	• Magnetic only
ETS	• Electronic (LSI)
ETM	• Electronic (LSIG, Ammeter, Communication, Zone selective interlocking)
DSU	• Disconnecting switch

Overview of trip units

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Trip unit identification

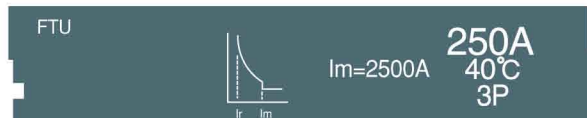
TS250 **FMU**

Trip unit function

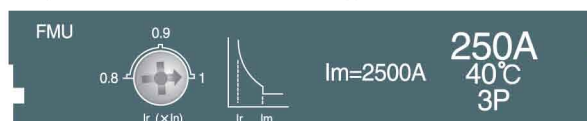
MCCB frame type



FTU Fixed-thermal, fixed-magnetic



FMU Adjustable-thermal, fixed-magnetic



ATU Adjustable-thermal, adjustable-magnetic



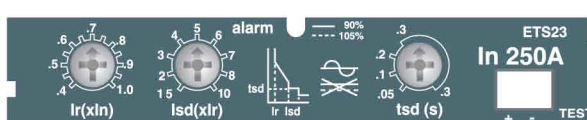
MTU Magnetic only



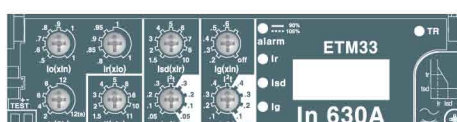
DSU Disconnecting switch



ETS Electronic (LSI)



ETM Electronic (LSIG, multi-function unit)



MCCBs for power distribution

Susol

Electrical characteristics

Frame size [AF]	
Rated current, I _n * [A]	
No. of poles	
Rated operational voltage, U _e	AC [V]
	DC [V]
Rated impulse withstand voltage, U _{imp} [kV]	
Rated insulation voltage, U _i [V]	
Rated ultimate short-circuit breaking capacity, I _{cu}	
AC 50/60Hz	220/240V [kA]
	380/415V [kA]
	440/460V [kA]
	480/500V [kA]
	660/690V [kA]
DC	250V [kA]
	500V(2poles in series) [kA]
Rated service breaking capacity, I _{cs} [%I _{cu}]	
Rated short-circuit making capacity I _{cm}	
AC 50/60Hz	220/240V [kA]
	380/415V [kA]
	440/460V [kA]
	480/500V [kA]
	660/690V [kA]
Category of utilization	
Isolation behavior	
Trip unit (release)	
Thermal-Magnetic	
● fixed-thermal, fixed-magnetic	FTU
● adjustable-thermal, fixed-magnetic	FMU
● adjustable-thermal, adjustable-magnetic	ATU
● magnetic only	MTU
Electronic	
● LSI	ETS
● LSI	ETM
Option	Earth-fault protection, Ig
	Zone selective interlocking, ZSI
	Ammeter
	Communication
	Earth-leakage protection module
Connection	fixed front-connection
	rear-connection
	plug-in front-connection
	rear-connection
Mechanical life [operations]	
Electrical life @ 415 V AC [operations]	
Basic dimensions, W×H×D (front connection)	1-pole [mm]
	3-pole [mm]
	4-pole [mm]
Weight (front connection)	1-pole [kg]
	3-pole [kg]
	4-pole [kg]
Reference standard	

* Breaking capacity at 660/690V is for your reference. (not certified)

TE100		TE160		TD100			TD160		
100		160		100			160		
16~100		100,125,160		16, 20, 25, 32, 40, 50, 63, 80, 100			1P: 16, 20, 25, 32, 40, 50, 63, 80, 100,125, 160 2, 3P: 100, 125, 160		
3,4		3,4		2*, 3, 4			1, 2*, 3, 4		
690		690		690			240(1P), 690		
500		500		500			250(1P), 500		
8		8		8			8		
750		750		750			750		
S	N	S	N	N	H	L	N	H	L
50	85	50	85	85	100	200	30(1P) 85	50(1P) 100	200
37	50	37	50	50	85	150	50	85	150
25	37	25	37	50	70	130	50	70	130
18	25	18	25	30	50	65	30	50	65
6	8	6	8	5	8	10	5	8	10
37	50	37	50	42	65	100	16(1P) 42	25(1P) 65	100
37	50	37	50	42	65	100	42	65	100
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
105	187	105	187	187	220	440	105(1P) 187	105(1P) 220	440
77.7	105	77.7	105	105	187	330	105	187	330
52.5	77.7	52.5	77.7	105	154	286	105	154	286
36	52.5	36	52.5	63	105	143	63	105	143
9.2	13.6	9.2	13.6	8	14	17	8	14	17
A		A		A			A		
●		●		●			●		
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MCCBs for power distribution

Susol

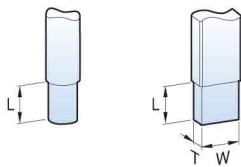
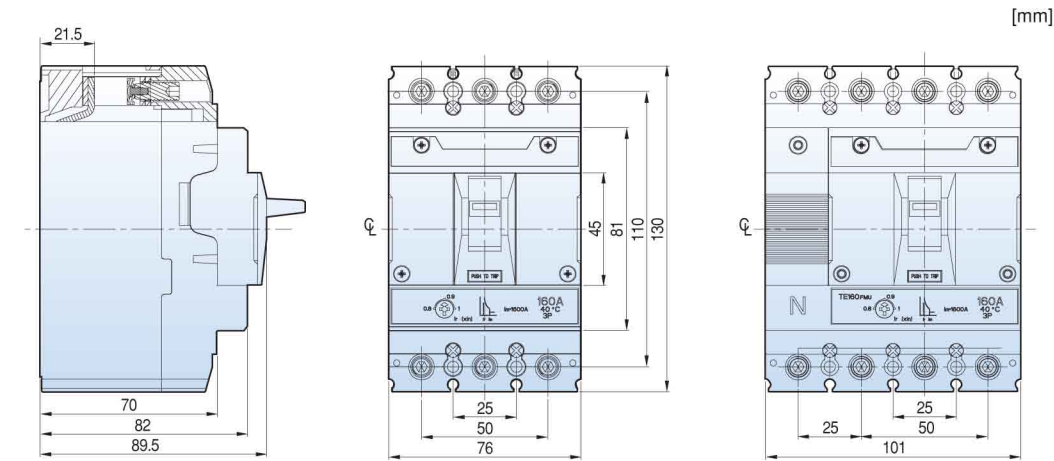
TS100			TS160			TS250			TS400			TS630			TS800		
100			160			250			400			630			800		
40, 50, 63, 80, 100			(100)*, 125, 160			125, 160, 200, 250			300, 400			500, 630			800		
2*, 3, 4			2*, 3, 4			2*, 3, 4			2*, 3, 4			2*, 3, 4			2*, 3, 4		
690			690			690			690			690			690		
500			500			500			500			500			500		
8			8			8			8			8			8		
750			750			750			750			750			750		
N	H	L	N	H	L	N	H	L	N	H	L	N	H	L	N	H	L
100	120	200	100	120	200	100	120	200	100	120	200	100	120	200	100	120	200
50	85	150	50	85	150	50	85	150	65	85	150	65	85	150	65	100	150
50	70	130	50	70	130	50	70	130	65	85	130	65	85	130	65	100	130
42	65	85	42	65	85	42	65	85	42	65	85	42	65	85	42	85	100
10	15	20	10	15	20	10	15	20	10	20	35	10	20	35	10	20	35
50	85	100	50	85	100	50	85	100	50	85	100	50	85	100	50	85	100
50	85	100	50	85	100	50	85	100	50	85	100	50	85	100	50	85	100
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
220	264	440	220	264	440	220	264	440	220	264	440	220	264	440	220	264	440
105	187	330	105	187	330	105	187	330	143	187	330	143	187	330	143	220	330
105	154	286	105	154	286	105	154	286	143	187	286	143	187	286	143	220	286
88	143	187	88	143	187	88	143	187	88	143	187	88	143	187	88	187	220
17	30	40	17	30	40	17	30	40	17	40	74	17	40	74	17	40	74
A			A			A			A			A			A		
●			●			●			●			●			●		
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25000			25000			25000			20000			20000			10000		
10000			10000			10000			6000			6000			3000		
-			-			-			-			-			-		
105×160×86			105×160×86			105×160×86			140×260×110			140×260×110			210×320×135		
140×160×86			140×160×86			140×160×86			186.5×260×110			186.5×260×110			280×320×135		
-			-			-			-			-			-		
2			2			2			5.4			5.4			15.1		
2.6			2.6			2.6			7.2			7.2			19.6		
IEC60947-2			IEC60947-2			IEC60947-2			IEC60947-2			IEC60947-2			IEC60947-2		

* The trip unit ATU is available from 125A

Overall dimensions

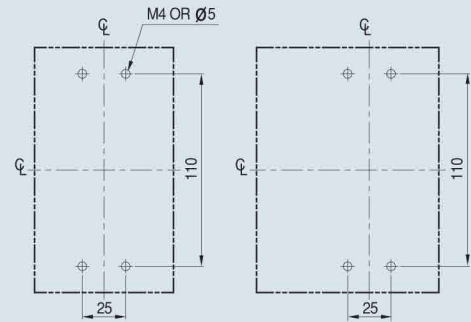
Susol

TE100/160

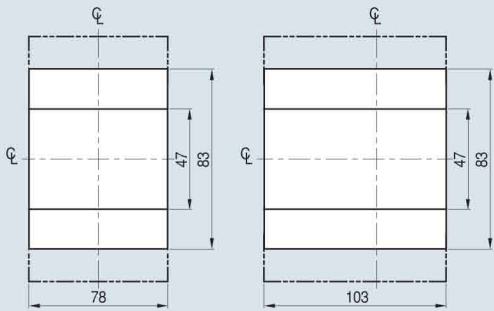


Wire size	Min	2.5mm ²
	Max.	70mm ²
L(mm)	17.5	
W(mm)	≤ 13.5	
T(mm)	≤ 6	
Torque	≤ 80kgf·cm	

Panel drilling



Front panel cutting

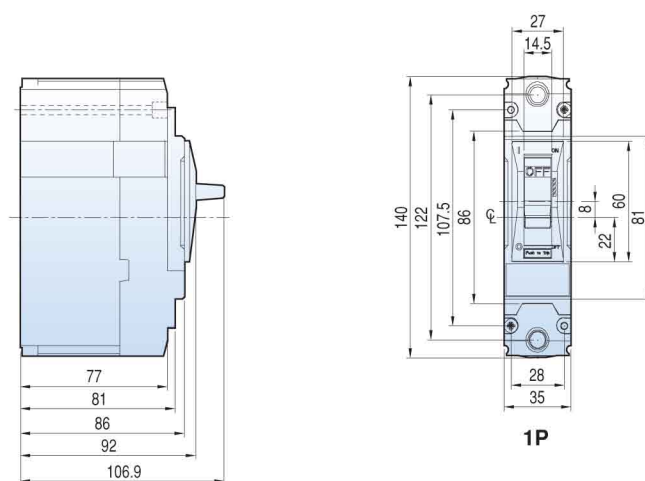


Overall dimensions

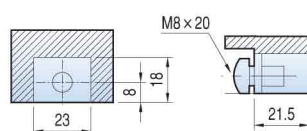
Susol

TD160

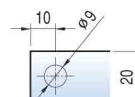
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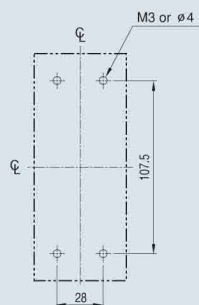
Terminal section



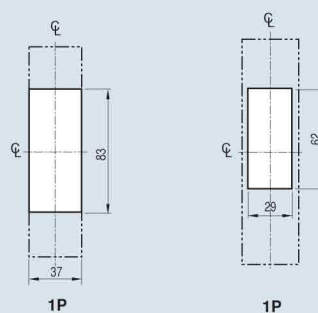
Conductor



Panel drilling



Front panel cutting

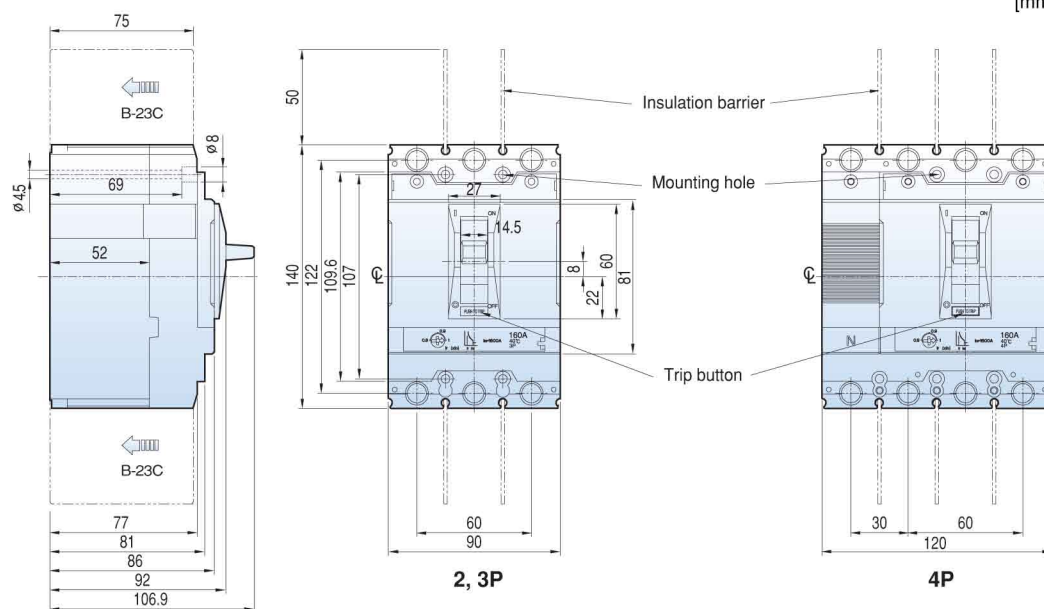


Overall dimensions

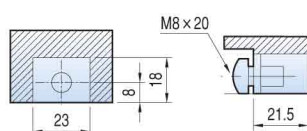
Susol

TD100/160

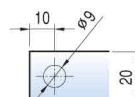
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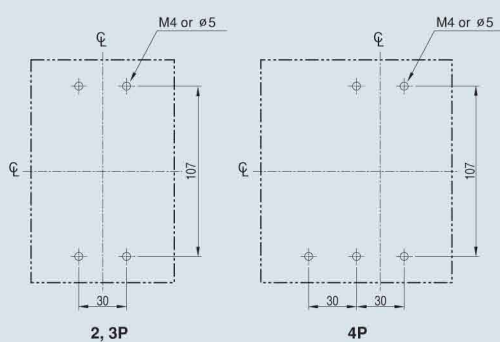
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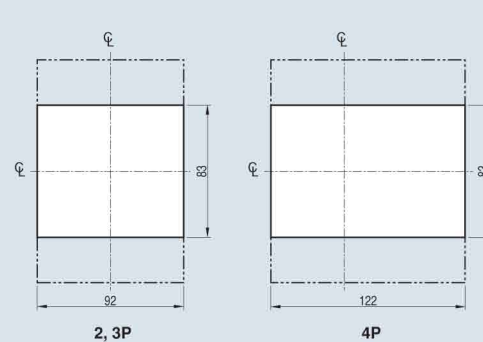
Conductor



Panel drilling



Front panel cutting

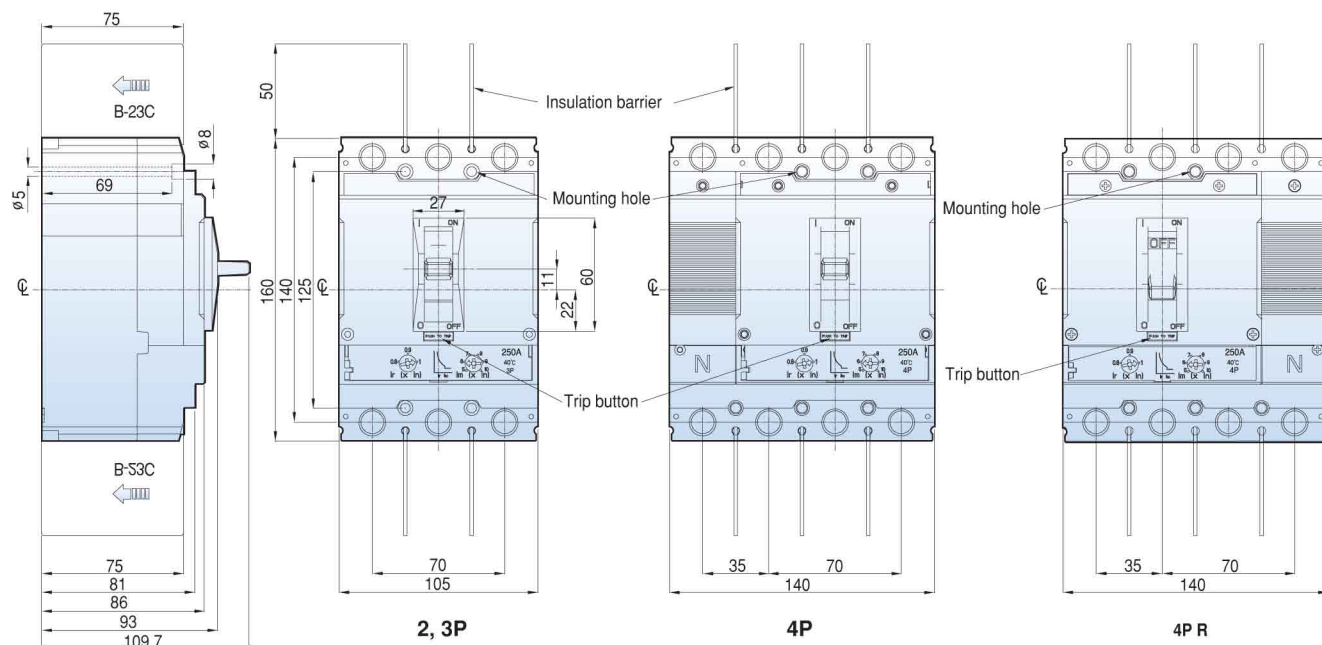


Overall dimensions

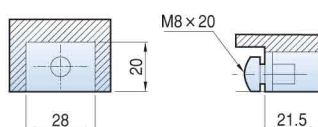
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TS100/160/250

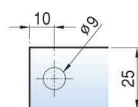
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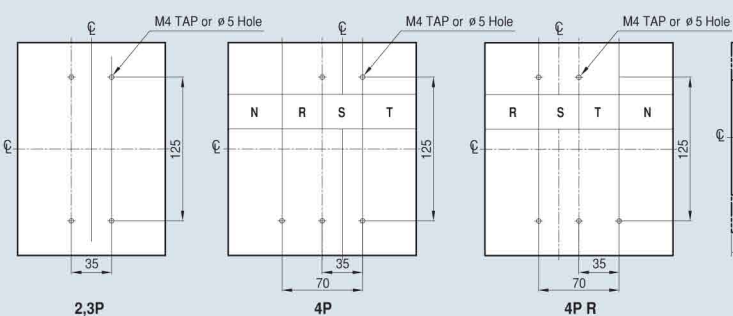
Terminal section



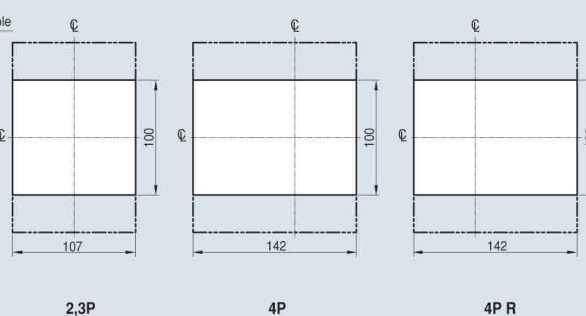
Conductor



Panel drilling



Front panel cutting

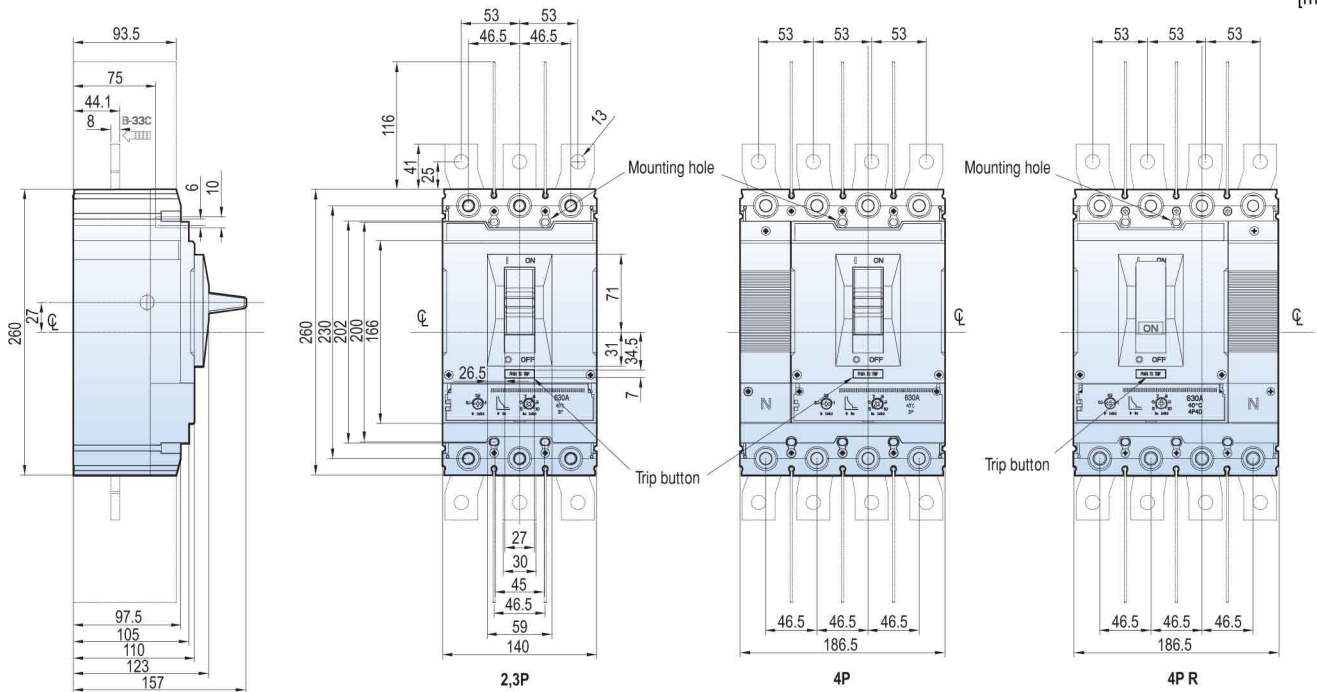


Overall dimensions

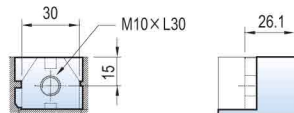
Susol

TS400/630

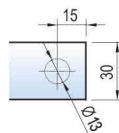
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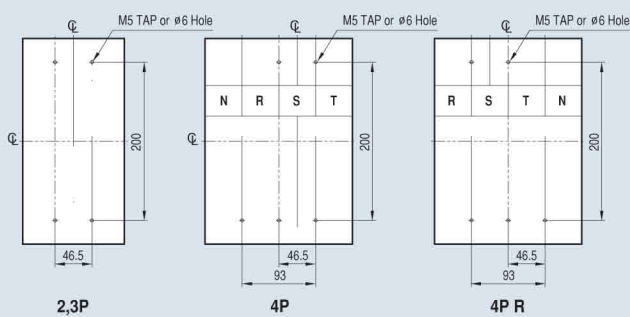
Terminal section



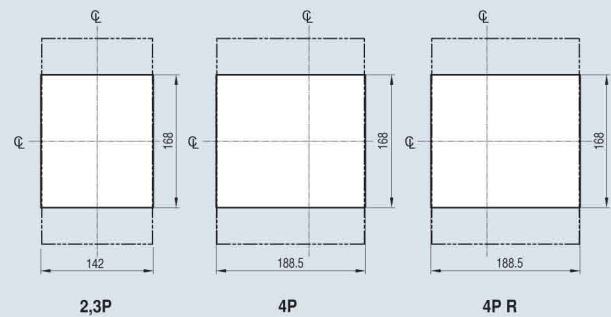
Conductor



Panel drilling



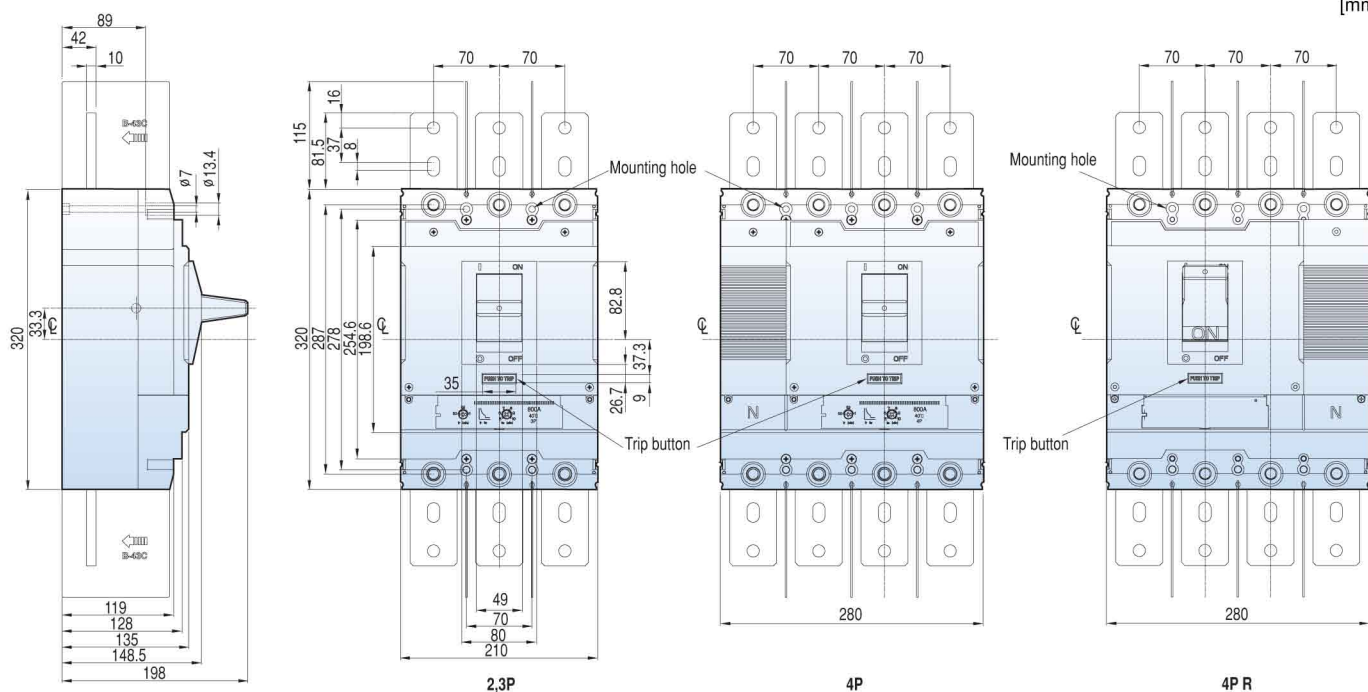
Front panel cutting



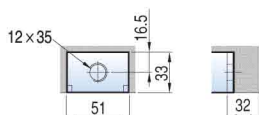
Susol

TS800

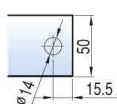
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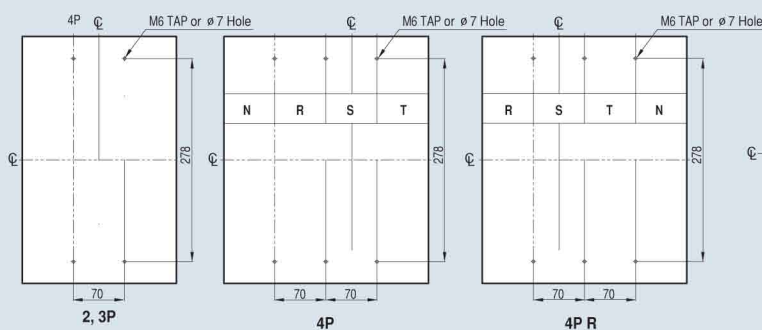
Terminal section



Conductor



Panel drilling



Front panel cutting

