SACE FORMULA DSP

Low voltage moulded-case circuit-breakers

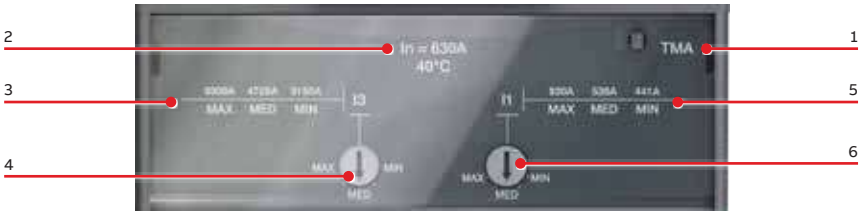


- Easy to install
- Simplified selection
- Wide applications

Protection trip units

Thermal-magnetic trip unit
Used in both AC and DC networks, these are a solution for protection against overloads and short-circuits. Overload protection is ensured thanks to ABB thermal device based on a temperature dependent bimetal heated by the current.

Protection against short-circuiting is realized with a magnetic device.
Depending on the version it is possible to set the desired thresholds for protection by turning the front rotary switch.



Key:
1. Trip unit type
2. Nominal current value
3. Current threshold for short-circuit protection
4. Rotary switch for short-circuit threshold setting
5. Current threshold for overload protection
6. Rotary switch for overload threshold setting

Power distribution protection

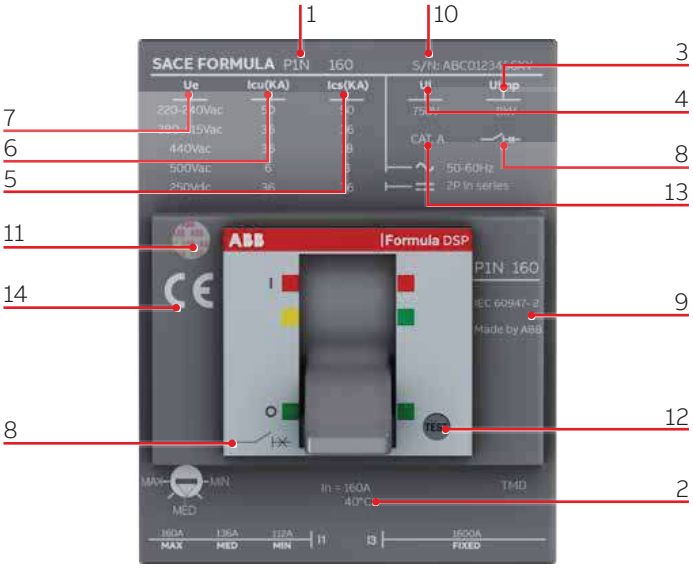
Field of application	Trip Unit	L – Overload Protection		I – Short-circuit Protection	
		Current Threshold	Trip Time	Current Threshold	Trip Time
Power Distribution Protection	TMD	Adjustable	Fixed	Fixed	Fixed instantaneous
	TMA	Adjustable	Fixed	Adjustable	Fixed instantaneous

	In [A]	16	20	25	32	40	50	63	80	100	125	160	200	250	320	400	630	800
TMD	P1	•	•	•	•	•	•	•	•	•	•	•						
	P2										•	•	•	•				
TMA	P3														•	•	•	

Construction characteristics

The characteristics of the circuit-breakers are given on the front of the circuit-breaker and on the side label.

Front of the circuit-breaker



1. Circuit-breaker name and performance level;
2. Serial Number;
3. Uimp: rated impulse withstand voltage;
4. Ui: insulation voltage;
5. Ue: rated service voltage;
6. Icu: rated ultimate short-circuit breaking capacity
7. Ics: rated short-circuit service breaking capacity;
8. Symbol of isolation behavior;
9. Category of use;

10. Reference Standards;
11. Anti-forgery;
12. Test pushbutton;
13. Marking
14. In: Rated Uninterrupted Current

SACE FORMULA DSP automatic circuit-breakers

Power distribution circuit-breakers

Size		**P1**		**P2**		**P3**	
							
Rated uninterrupted current	[A]	160		250		400/630	
Poles	[No.]	3, 4		3, 4		3, 4	
Rated service voltage, **Ue**	AC 50-60Hz [V]	500		500		500	
	DC [V]	250		250		250	
Rated insulation voltage, **Ui**	[V]	750		750		750	
Rated impulse withstand voltage, **Uimp**	[kV]	8		8		8	
Breaking capacities according to IEC 60947-2		**C**	**N**	**C**	**N**	**N**	**S**
Rated ultimate short-circuit breaking capacity, Icu							
Icu @ 220-230-240V 50-60Hz (AC)	[kA]	40	50	40	50	50	80
Icu @ 380V 50-60Hz (AC)	[kA]	25	36	25	36	36	50
Icu @ 415V 50-60Hz (AC)	[kA]	25	36	25	36	36	50
Icu @ 440V 50-60Hz (AC)	[kA]	25	36	25	36	36	50
Icu @ 500V 50-60Hz (AC)	[kA]	4	6	4	5	20	25
Icu @ 250V (DC) 2-pole in series	[kA]	25	36	25	36	25	35
Rated service short-circuit breaking capacity, Ics							
Ics @ 220-230-240V 50-60Hz (AC)	[kA]	40	50	40	50	50	80
Ics @ 380V 50-60Hz (AC)	[kA]	25	36	25	36	36	50
Ics @ 415V 50-60Hz (AC)	[kA]	25	36	25	36	36	50
Ics @ 440V 50-60Hz (AC)	[kA]	12.5	18	12.5	18	36	50
Ics @ 500V 50-60Hz (AC)	[kA]	3	3	3	3	15	18
Ics @ 250V (DC) 2-pole in series	[kA]	25	36	25	36	25	35
Rated short-circuit making capacity, Icm							
Icm @ 220-230-240V 50-60Hz (AC)	[kA]	84	105	84	105	105	176
Icm @ 380V 50-60Hz (AC)	[kA]	52.5	75.6	52.5	75.6	75.6	105
Icm @ 415V 50-60Hz (AC)	[kA]	52.5	75.6	52.5	75.6	75.6	105
Icm @ 440V 50-60Hz (AC)	[kA]	52.5	75.6	52.5	75.6	75.6	105
Icm @ 500V 50-60Hz (AC)	[kA]	5.88	9	5.88	7.5	40	52.5
Utilization Category (IEC 60947-2)			A		A		A
Reference Standard			IEC 60947-2		IEC 60947-2		IEC 60947-2
Insulation behaviour			✓		✓		✓
Mechanical life	[No. Operations]		20,000		20,000		15,000
	[No. Hourly operations]		240		240		240
Electrical life @ 415 V (AC)	[No. Operations]		8,000		8,000		5,000
	[No. Hourly operations]		120		120		120
Dimensions							
Fixed (Width x Depth x Height)	3 poles [mm]		76.2 x 70 x 130		105 x 70 x 150		140 x 103 x 205
	4 poles [mm]		101.6 x 70 x 130		140 x 70 x 150		186 x 103 x 205
Weight							
Fixed	**3 /4 poles [kg]**		1.1 / 1.4		1.7 / 2.1		3.25 / 4.15

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