

Molded case circuit breakers

Susol MCCB 100AF to 800AF Series

		TE100	TE160	TD100	TD160							
Frame size	[AF]	100	160	100	160							
Rated current, I _n *	[A]	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							
No. of poles		3,4	3,4	2*, 3, 4	1, 2*, 3, 4							
Rated operational voltage, U _e	AC	690	690	690	240(1P), 690							
	DC	500	500	500	250(1P), 500							
Rated impulse withstand voltage, U _{imp}	[kV]	8	8	8	8							
Rated insulation voltage, U _i [V]		750	750	750	750							
Rated ultimate short-circuit breaking capacity, I _{cu}		S	N	S	N	N	H	L	N	H	L	
AC 50/60Hz 220/240V	[kA]	50	85	50	85	85	100	200	30(1P) 85	50(1P) 100	200	
	380/415V [kA]	37	50	37	50	50	85	150	50	85	150	
	440/460V [kA]	25	37	25	37	50	70	130	50	70	130	
	480/500V [kA]	18	25	18	25	30	50	65	30	50	65	
	660/690V [kA]	6	8	6	8	5	8	10	5	8	10	
DC	250V [kA]	37	50	37	50	42	65	100	16(1P) 42	25(1P) 65	100	
	500V(2poles in series) [kA]	37	50	37	50	42	65	100	42	65	100	
Rated service breaking capacity, I _{cs}	[%I _{cu}]	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Rated short-circuit making capacity I _{cm}												
AC 50/60Hz 220/240V	[kA]	105	187	105	187	187	220	440	105(1P) 187	105(1P) 220	440	
	380/415V [kA]	77.7	105	77.7	105	105	187	330	105	187	330	
	440/460V [kA]	52.5	77.7	52.5	77.7	105	154	286	105	154	286	
	480/500V [kA]	36	52.5	36	52.5	63	105	143	63	105	143	
	660/690V [kA]	9.2	13.6	9.2	13.6	8	14	17	8	14	17	
Category of utilization		A	A	A	A	A	A	A	A	A	A	
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, I _g	-	-	-	-	-	-	-	-	-	-	
	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]	25000	25000	25000	25000	25000	25000	25000	25000	25000	25000	
Electrical life @ 415 V AC	[operations]	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	
Basic dimensions, W×H×D (front connection)	1-pole	[mm]	-	-	-	-	-	-	-	-	35 × 140 × 86	
	3-pole	[mm]	76 × 130 × 82	76 × 130 × 82	76 × 130 × 82	76 × 130 × 82	90 × 140 × 86	90 × 140 × 86	90 × 140 × 86	90 × 140 × 86	90 × 140 × 86	
	4-pole	[mm]	101 × 130 × 82	101 × 130 × 82	101 × 130 × 82	101 × 130 × 82	120 × 140 × 86	120 × 140 × 86	120 × 140 × 86	120 × 140 × 86	120 × 140 × 86	
Weight (front connection)	1-pole	[kg]	-	-	-	-	-	-	-	-	0.57	
	3-pole	[kg]	1.05	1.05	1.05	1.05	1.5	1.5	1.5	1.5	1.5	
	4-pole	[kg]	1.35	1.35	1.35	1.35	1.8	1.8	1.8	1.8	1.8	
Reference standard		IEC60947-2	IEC60947-2	IEC60947-2	IEC60947-2	IEC60947-2	IEC60947-2	IEC60947-2	IEC60947-2	IEC60947-2	IEC60947-2	

Note) ● applicable or available

* Applicable to MCCBs equipped with FTU, FMU, ATU
* 2 pole MCCB in 3pole frame size

** 700A only available for TS800FTU
*** Not applicable to 1pole

※ The trip unit ATU is available from 125A



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			700**, 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		
●			●			●			●			●			●		
	●			●			●			●			●			●	
●			●			●			●			●			●		
	●			●			●			●			●			●	
-				●			●			●			●			●	
●			●			●			●			●			●		
	●			●			●			●			●			●	
●			●			●			●			●			●		
	●			●			●			●			●			●	
●			●			●			●			●			●		
●			●			●			●			●			●		
●			●			●			●			●			●		
●			●			●			●			●			●		
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		

	Amb. Temp.	-5°C	0°C	10°C	20°C	25°C	30°C	35°C	40°C	45°C	50°C
Calibrated for 40°C	TD160	122.5%	120.0%	115.0%	110.0%	107.5%	105.0%	102.5%	100.0%	97.5%	95.0%
	TS250	122.5%	120.0%	115.0%	110.0%	107.5%	105.0%	102.5%	100.0%	97.5%	95.0%
	TS630	110.0%	109.0%	107.0%	105.0%	104.0%	103.0%	101.5%	100.0%	98.5%	97.0%
	TS800	110.0%	109.0%	107.0%	105.0%	104.0%	103.0%	101.5%	100.0%	98.5%	97.0%
Calibrated for 50°C	TD160	122.0%	120.0%	116.0%	112.0%	110.0%	108.0%	106.0%	104.0%	102.0%	100.0%
	TS250	122.0%	120.0%	116.0%	112.0%	110.0%	108.0%	106.0%	104.0%	102.0%	100.0%
	TS630	122.2%	112.0%	110.0%	108.0%	107.0%	106.0%	104.5%	103.0%	101.5%	100.0%
	TS800	112.2%	112.0%	110.0%	108.0%	107.0%	106.0%	104.5%	103.0%	101.5%	100.0%

Molded case circuit breakers

Susol MCCB 1600AF Series





Electrical characteristics



Electrical characteristics			
Type			
Ampere frame			
Pole			
Rated current,(A)	In	-5~40°C	
		50°C	
		65°C	
Rated insulation voltage, (V)	Ui		
Rated impulse withstand voltage, (kV)	Uimp		
Rated operational voltage, (V)	Ue	AC50/60Hz	
		DC	
Rated short-circuit breaking capacity			
IEC60947-2 AC50/60Hz (sym)	Rated ultimate short-circuit breaking capacity, (kA) (Icu)	220/240V	
		380/415V	
		440/460V	
		480/500V	
		660/690V	
		DC	
		250V 2P	
		500V 2P	
		750V 3P	
Rated service breaking capacity (Ics)	%Icu		
Rated short-circuit making capacity (kA) (Icw)	AC50/60Hz	1s	
		3s	
Overriding instantaneous protection	kA peak		
Isolation			
Category			
(Life cycle)	Mechanical life (operations)		
	Electrical life (operations)	440V	In/2
			In
		690V	In/2
In			
Pollution degree			
Dimension (mm)	3-pole		
(H×W×D)	4-pole		
Weight (kg)	3-pole		
	4-pole		

		TS1000		TS1250		TS1600	
		TS1000		TS1250		TS1600	
		1000		1250		1600	
		3, 4		3, 4		3, 4	
		800, 1000		1250		1600	
		800, 1000		1250		1560	
		800, 1000		1240		1420	
		1000		1000		1000	
		8		8		8	
		690		690		690	
		-		-		-	
N	H	L	N	H	N	H	
55	75	200	55	75	55	75	
50	70	150	50	70	50	70	
50	65	130	50	65	50	65	
40	50	100	40	50	40	50	
35	45	-	35	45	35	45	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	
100%	75%	100%	100%	75%	100%	75%	
25		12		25		25	
-		-		-		-	
50		30		50		50	
○		○		○		○	
B		A		B		B	
10000		4000		10000		10000	
6000		4000		5000		5000	
5000		3000		4000		2000	
4000		3000		3000		2000	
2000		2000		2000		1000	
3		3		3		3	
				327×210×152.5			
				327×280×152.5			
				13			
				16.8			

Overview

Classification	N type	A type	P type	S type
Externals				
Current protection	• L / S / I / G / Thermal	• L / S / I / G / Thermal • ZSI(Protective coordination)	• L / S / I / G / Thermal(Continuous) • ZSI(Protective coordination)	• P type
Other protection	-	• Earth leakage (Option)	• Earth leakage(Option) • Over/Under current • Over/Under frequency • Unbalance(Voltage/Current) • Reverse power	• P type
Measurement function	-	• Current (R / S / T / N)	• 3 Phase Voltage/Current RMS/Vector • Power(P, Q, S), PF(3-Phase) • Energy(Positive/Negative) • Frequency, Demand	• 3 Phase Voltage/Current RMS/Vector • Power(P, Q, S), PF(3-Phase) • Energy(Positive/Negative) • Frequency, Demand • Voltage/Current harmonics (1st-63th) • 3 Phase Waveforms • THD, TDD, K-Factor
Fine adjustment	-	-	• Fine adjustment for long/short time delay/instantaneous/ ground	• P type
Pre Trip Alarm	-	-	• Overload protection relays : DO (Alarm) (Ground fault is not available when using Pre trip alarm)	• P type
Digital Output	-	• 3DO (Fixed) • L, S/I, G Alarm	• 3DO (Programmable) • Trip, Alarm, General	• P type
IDMTL setting	-	-	• Compliance with IEC60255-3 SIT, VIT, EIT, DT	• P type
Communication	-	• Modbus/RS-485 • Profibus-DP	• Modbus / RS-485 • Profibus-DP	• Modbus / RS-485 • Profibus-DP
Power supply	• Self Power -Power source works over 25% of current of In (one pole)	• Self Power - Power source works over 25% of current of In (one pole) - External power source are required for comm. • AC/DC 100~250V • DC 24~60V	• AC/DC 100~250V • DC 24~60V	• AC/DC 100~250V • DC 24~60V
RTC timer	• Available	• Available	• Available	• Available
LED for trip info.	• Long time delay • Short time delay/Instantaneous • Ground fault	• N type	• N type	• N type
Fault recording	-	• 10 records (Fault/Current/Date and Time)	• 256 records (Fault/Current/Date and Time)	• 256 records • Last fault wave recording (3 Phase)
Event recording	-	-	• 256 records(Content, Status, Date)	• P type
Operating button	• Reset button	• Reset, Menu Up/Down, Left/Right, Enter	• A type	• A type

Basic protection function(L / S / I / G) is still under normal operation without control power.