

## MCCBs for motor protection

Susol

### Electrical characteristics



Frame size		[AF]
Rated current, I <sub>n</sub>		[A]
No. of poles		
Rated operational voltage, U <sub>e</sub>	AC	[V]
	DC	[V]
Rated impulse withstand voltage, U <sub>imp</sub>		[kV]
Rated insulation voltage, U <sub>i</sub>		[V]
Rated ultimate short-circuit breaking capacity, I <sub>cu</sub>		
AC 50/60Hz	220/240V	[kA]
	380/415V	[kA]
	440/460V	[kA]
	480/500V	[kA]
	660/690V	[kA]
Rated service breaking capacity, I <sub>cs</sub> [%I <sub>cu</sub> ]		
Rated short-circuit making capacity, I <sub>cm</sub>		
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)		
● magnetic only		MTU
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)		3-pole [mm]
Weight (front connection)		3-pole [kg]
Reference standard		

TS100			TS160			TS250		
100			160			250		
1.6, 3.2, 6.3, 12, 20, 32, 50, 63, 100			32, 50, 63, 80, 100, 160			100, 160, 220		
3			3			3		
690			690			690		
500			500			500		
8			8			8		
750			750			750		
N	H	L	N	H	L	N	H	L
100	120	200	100	120	200	100	120	200
50	85	150	50	85	150	50	85	150
50	70	130	50	70	130	50	70	130
42	65	85	42	65	85	42	65	85
10	15	20	10	15	20	10	15	20
100%	100%	100%	100%	100%	100%	100%	100%	100%
220	264	440	220	264	440	220	264	440
105	187	330	105	187	330	105	187	330
105	154	286	105	154	286	105	154	286
88	143	187	88	143	187	88	143	187
17	30	40	17	30	40	17	30	40
A			A			A		
●			●			●		
●			●			●		
●			●			●		
●			●			●		
●			●			●		
25000			25000			25000		
10000			10000			10000		
105×160×86			105×160×86			105×160×86		
2			2			2		
IEC60947-2			IEC60947-2			IEC60947-2		

# MCCBs for motor protection

Susol

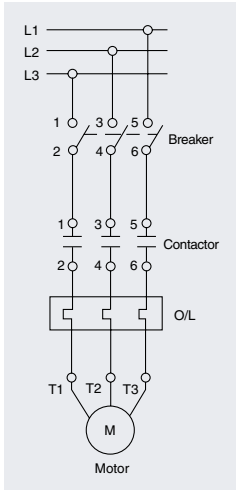


TS400			TS630			TS800		
400			630			800		
320			500			630		
3			3			3		
690			690			690		
500			500			500		
8			8			8		
750			750			750		
N	H	L	N	H	L	N	H	L
100	120	200	100	120	200	100	120	200
65	85	150	65	85	150	65	100	150
65	85	130	65	85	130	65	100	130
42	65	85	42	65	85	42	85	100
10	20	35	10	20	35	10	20	35
100%	100%	100%	100%	100%	100%	100%	100%	100%
220	264	440	220	264	440	220	264	440
143	187	330	143	187	330	143	220	330
143	187	286	143	187	286	143	220	286
88	143	187	88	143	187	88	187	220
17	40	74	17	40	74	17	40	74
A			A			A		
●			●			●		
●			●			●		
●			●			●		
●			●			●		
●			●			●		
●			●			●		
20000			20000			10000		
6000			6000			3000		
140 × 260 × 110			140 × 260 × 110			210 × 320 × 135		
5.4			5.4			15.1		
IEC60947-2			IEC60947-2			IEC60947-2		

# MCCBs for motor protection

Susol

## Magnetic only trip unit MTU for TS100, TS160, TS250, TS400, TS630, TS800



For the protection of motors from 1.6 to 250kW(400V), TS100 to TS800 circuit Breakers must be equipped with a special trip unit MTU adjustable thresholds.

This assembly ensures: Short-circuit protection (magnetic trip unit with adjustable thresholds); Suitability for isolation. For the TS100 to TS800 circuit breakers, trip unit MTU is interchangeable.

The circuit breakers presented here: Provide protection against short-circuits; Are suitable for isolation as defined by IEC60947-2 standard.

### Configuration



### Catalogue numbering system

**TS250 MTU**

**Magnetic only release**

**MCCB frame type**

- TS100: TS100N, TS100H, TS100L
- TS160: TS160N, TS160H, TS160L
- TS250: TS250N, TS250H, TS250L
- TS400: TS400N, TS400H, TS400L
- TS630: TS630N, TS630H, TS630L
- TS800: TS800N, TS800H, TS800L

# MCCBs for motor protection

Susol

## Characteristics

### Magnetic trip units(MTU)

Rating(A)		In
N / H / L	TS100	
	TS160	
	TS250	
	TS400	
	TS630	
	TS800	

TS100 to TS800													
1.6	3.2	6.3	12	20	32	50	63	100	160	220	320	500	630
●	●	●	●	●	●	●	●	●	-	-	-	-	-
-	-	-	-	-	●	●	●	●	●	-	-	-	-
-	-	-	-	-	-	-	-	●	●	●	-	-	-
-	-	-	-	-	-	-	-	-	-	-	●	-	-
-	-	-	-	-	-	-	-	-	-	-	-	●	-
-	-	-	-	-	-	-	-	-	-	-	-	-	●

### Short - circuit protection(magnetic)

Pick - up	Im

setting
6..12 × In (6 Point)

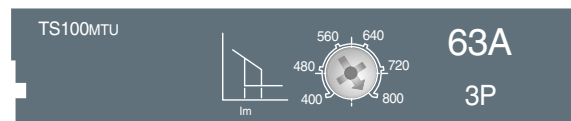
## Setting details

MTU In	6 × In	..	..	..	..	12 × In
1.6	10	12	14	16	18	20
3.2	20	24	28	32	36	40
6.3	40	48	56	64	72	80
12	70	84	98	112	126	140
20	120	144	168	192	216	240
32	190	228	266	304	342	380
50	300	360	420	480	540	600
63	400	480	560	640	720	800

MTU In	6 × In	..	..	..	..	12 × In
100	600	720	840	960	1080	1200
160	960	1152	1344	1536	1728	1920
220	1320	1584	1848	2112	2376	2640
320	1920	2304	2688	3072	3456	3840
500	3000	3600	4200	4800	5400	6000
630	3780	4536	5292	6048	6804	7560

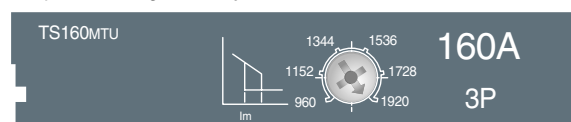
### TS100MTU

- Adjustable magnetic only unit



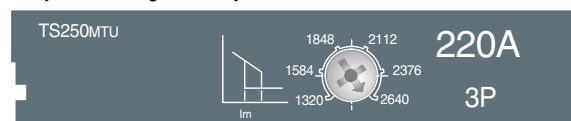
### TS160MTU

- Adjustable magnetic only unit



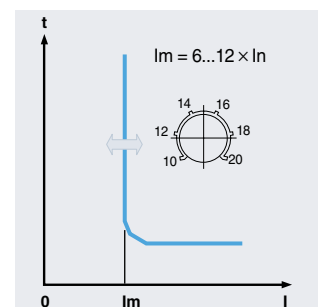
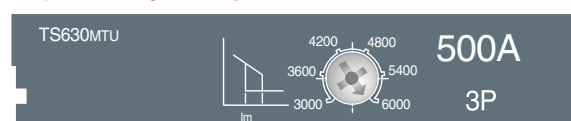
### TS250MTU

- Adjustable magnetic only unit



### TS400 MTU, TS630MTU, TS800MTU

- Adjustable magnetic only unit



# Switch-Disconnectors

Susol

## Electrical characteristics

Frame size		[AF]
Conventional thermal current, I <sub>th</sub>		[A]
No. of poles		
Rated operational voltage, U <sub>e</sub>	AC	[V]
	DC	[V]
Rated operational current, I <sub>e</sub>		
Rated impulse withstand voltage, U <sub>imp</sub>		[kV]
Rated insulation voltage, U <sub>i</sub>		[V]
Rated short-circuit making capacity, I <sub>cm</sub>		[kA peak]
Rated short-time withstand current, I <sub>cw</sub>	1s	[A rms]
	3s	[A rms]
	20s	[A rms]
Isolation behavior		
Trip unit (release)		
● disconnector unit		DSU
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)	3-pole	[mm]
	4-pole	[mm]
Weight (front connection)	3-pole	[kg]
	4-pole	[kg]
Reference standard		

### TD series



TD160NA	TS100NA	TS160NA
160	100	160
160	100	160
2, 3, 4	2, 3, 4	2, 3, 4
690	690	690
500	500	500
160	100	160
8	8	8
750	750	750
3.1	2.8	3.6
2200	2000	2500
2200	2000	2500
960	690	960
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
25000	25000	25000
10000	10000	10000
90 × 140 × 86	105 × 160 × 86	105 × 160 × 86
120 × 140 × 86	140 × 160 × 86	140 × 160 × 86
1.5	2	2
1.8	2.6	2.6
IEC60947-3	IEC60947-3	IEC60947-3

The switch-disconnectors are different from the circuit-breakers in the absence of the conventional protection unit. They keep the overall dimensions, connection systems and accessories unchanged from the corresponding circuit-breakers. Installation standards require upstream protection. However, thanks to their high-set magnetic release, TD160 ... TS800 DSU are self protected.

# Switch-Disconnectors

Susol

## TS series



TS250NA	TS400NA	TS630NA	TS800NA
250	400	630	800
250	400	630	800
2, 3, 4	2, 3, 4	2, 3, 4	2, 3, 4
690	690	690	690
500	500	500	500
250	400	630	800
8	8	8	8
750	750	750	750
4.9	7.1	8.5	12
3500	5000	6300	8000
3500	5000	6300	8000
1350	1930	2320	2560
•	•	•	•
•	•	•	•
•	•	•	•
•	•	•	•
•	•	•	•
•	•	•	•
25000	20000	20000	10000
10000	6000	6000	3000
105 × 160 × 86	140 × 260 × 110	140 × 260 × 110	210 × 320 × 135
140 × 160 × 86	186.5 × 260 × 110	186.5 × 260 × 110	280 × 320 × 135
2	5.4	5.4	15.1
2.6	7.2	7.2	19.6
IEC60947-3	IEC60947-3	IEC60947-3	IEC60947-3

Trip unit identification



[www.electrohamand.com](http://www.electrohamand.com)