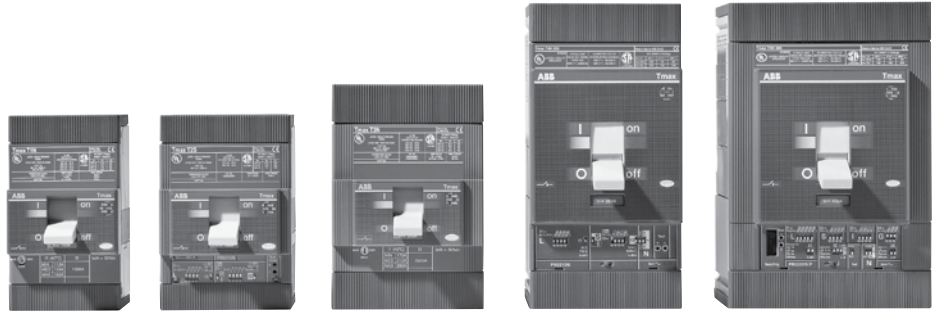


Tmax Molded case circuit breakers



Tmax Molded case circuit breakers



Introduction

ABB is once again demonstrating its commitment to new product development and its superiority in product technology. Never before has the industry seen such high performance, versatility and standardization in a range of molded case circuit breakers.

The ABB Tmax line of circuit breakers, with a range up to 3000A, has several key features that go along with its very small size:

- Double insulation – this construction characteristic allows for the UL Listed field installation of internal accessories without exposure to energized parts.
- Complete range of electrical and mechanical accessories
- Positive operation – breakers from ABB ensure that the toggle indicates the precise position of the moving contacts. This guarantees safe and reliable signaling by the device.
- Installation – Tmax molded case circuit breakers can be installed in panels and switchboards in either the horizontal or vertical planes while being fed from either end without any derating of their performance characteristics.
- Interrupting ratings at 480VAC up to 150kAIC.
- Compact size
- All Tmax molded case circuit breakers are UL Listed and IEC rated for global application and acceptance.
- All versions of the Tmax family are suitable for reverse feed applications.

The ABB Tmax product line has the performance and accessories to satisfy all industry requirements in the 600VAC to 600VDC ranges.

Frame sizes — Nine basic sizes

The ABB Tmax series includes nine basic frame sizes as well as the T1 single pole with the range rated from 15A to 3000A at 480VAC. The various versions carry the following interrupting capacities:

- **B** Basic breaking capacity
- **N** Normal breaking capacity
- **S** Standard breaking capacity
- **H** High breaking capacity
- **L** Extra high breaking capacity
- **V** Very high breaking capacity

Derived versions

- Thermal magnetic
- Electronic
- Molded case switches
- Motor circuit protectors (MCPs)
- Direct current (DC) rated

ABB Tmax versions

- Fixed: all models
- Drawout or plug-in: T2, T3, Ts3, T4, T5, T6, T7 & T7M
- UL File #E93565 (breakers and MCPs)
#E116596 (Accessories)
#E116595 (Molded case switches)

Selection Guide

Circuit breakers for power distribution

T1 – Ts3



T1 1P



T1



T2



T3



Ts3

Type		Tmax T1 1p	Tmax T1	Tmax T2	Tmax T3	Tmax Ts3	Tmax Ts3	
Frame size	[A]	100	100	100	225	150	225	
Number of poles	[Nr]	1	3-4	3-4	3-4	2-3-4	2-3-4	
Rated voltage	AC (50-60Hz)	[V]	347	600Y/347	480	600Y/347	600	480
	DC	[V]		500		500	600	500
Interrupting ratings		B	N	S H	N S	N H L	N H L	
	240V AC	[kA rms]	50 ②	65 150	50 65	65 100 150	65 100 150	
	277V AC	[kA rms]	18 ①					
	347V AC	[kA rms]	14 ①					
	480V AC	[kA rms]		22 ②	35 65	25 35	25 50 85 ⑤	25 50 65
	600Y/347V AC	[kA rms]		10		10 10		
	600V AC	[kA rms]					14 14 25	
	250V DC (2 poles in series)	[kA rms]		25		25 35		
	500V DC (3 poles in series)	[kA rms]		25		25 35		
500V DC (2 poles in series)	[kA rms]					35 50 65	20 35 50	
600V DC (3 poles in series)	[kA rms]					20 35 50		
Trip units	TMF	■	■	■	■	■	■	
	TMD/TMA							
	ELT			■				
	MA			■	■	■	■	
	Electronic			■				
Dimensions	H	[in/mm]	5.12/130	5.12/130	5.12/130	5.9/150	6.7/170	6.7/170
	W 3p	[in/mm]	1/25.4	3/76	3.54/90	4.13/105	4.13/105	4.13/105
	D	[in/mm]	2.76/70	2.76/70	2.76/70	2.76/70	4.07/103.5	4.07/103.5
Mechanical life	[No. operations]	25000	25000	25000	25000	25000	25000	

① In15A = 10kA@277VAC 10kA@347VAC
 ② In15A = 35kA@240VAC 14kA@480Y/277 VAC
 ③ T5 600 with electronic trip units only and in three pole version
 ④ 2p breakers: available only in N interrupting rating
 ⑤ In from 15A up to 30A=65kA@480V AC

Selection Guide

Circuit breakers for power distribution

T4 – T8



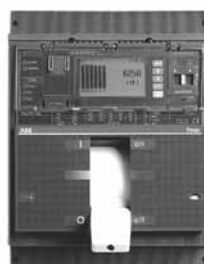
T4



T5



T6



T7



T8

Type		Tmax T4	Tmax T5	Tmax T6	Tmax T7/T7M	Tmax T8	
Frame size	[A]	250	400-600 ③	800	1000-1200	1600, 2000, 2500 & 3000	
Number of poles	[Nr]	2-3-4 ④	2-3-4 ④	3-4	3-4	3-4	
Rated voltage	AC (50-60Hz)	[V]	600	600	600	600	
	DC	[V]	600	600	600	600	
Interrupting ratings		N S H L V	N S H L V	N S H L	S H L	V	
	240V AC	[kA rms]	65 100 150 200 200	65 100 150 200 200	65 100 200 200	65 100 150	125
	277V AC	[kA rms]					
	347V AC	[kA rms]					
	480V AC	[kA rms]	25 35 65 100 150	25 35 65 100 150	35 50 65 100	50 65 100	125
	600Y/347V AC	[kA rms]					
	600V AC	[kA rms]	18 25 35 65 100	18 25 35 65 100	20 25 35 42	25 50 65	100
	250V DC (2 poles in series)	[kA rms]					
500V DC (3 poles in series)	[kA rms]						
500V DC (2 poles in series)	[kA rms]	25 35 50 65 100	25 35 50 65 100	35 35 50 65			
600V DC (3 poles in series)	[kA rms]	16 25 35 50 65	16 25 35 50 65	20 20 35 50			
Trip units	TMF		■				
	TMD/TMA		■	■			
	ELT						
	MA						
	Electronic		■	■	■	■	
Dimensions	H	[in/mm]	8.07/205	8.07/205	10.55/268	10.55/268	15 / 382
	W 3p	[in/mm]	4.13/105	5.51/140	8.26/210	8.26/210	16.8 / 427
	D	[in/mm]	4.07/103.5	4.07/103.5	4.07/103.5	6.06/154 (toggle) 7/178 (motor)	11.2 / 282
Mechanical life	[No. operations]	20,000	20,000	20,000	10,000	15,000	

① In15A = 10kA@277 VAC 10kA@347 VAC
 ② In15A = 35kA@240 VAC 14kA@480Y/277 VAC
 ③ T5 600 with electronic trip units only and in three pole version-
 ④ 2p T4N250 and T5N400 available only in N interrupting capacity.
 ⑤ In from 15A up to 30A=65kA@480 VAC
 ⑥ Applies to MCS only.

General information

Catalog number explanation

T3 S 080 T W - 4 xxx

● **Accessories** (added in alpha-numeric order) ①

- A = Auxiliary Switch
- S_ = Shunt trip with voltage code
- U_ = Undervoltage release with voltage code

● **Number of poles**

- 1 = 1 pole (T1 only)
- 2 = 2 pole
- 4 = 4 pole
- None = 3 pole

● **Type connectors**

- W = None
- L = Lugs included

● **Trip unit function**

- B = LS/I (AC only)
- D = Molded Case Switch (MCS)
- T = Thermal-magnetic
- M = Magnetic only (MCP)
- E5 = Electronic MCP (AC only)
- C = LSI (AC only)
- E = LSIG (AC only)
- CZ = LSI/PD ②
- EZ = LSIG/PD ②
- P = LI - LCD Display ③
- R = LSI - LCD Display ③
- S = LSIG - LCD Display ③

● **Current rating**

- 015 = 15A
- 080 = 80A
- 100 = 100A
- 225 = 225A
- 250 = 250A
- 400 = 400A
- 600 = 600A
- 800 = 800A
- 1200 = 1200A

● **Interrupting rating class**

- B = Basic
- N = Normal
- S = Standard
- H = High
- L = Extra High
- V = Very high
- Q = 100% Rated

● **Frame size**

- T1 = 100A
- T2 = 100A
- T3 = 225A
- Ts3 = 225A
- T4 = 250A
- T5 = 400A, 600A
- T6 = 600A, 800A
- T7 = 1000A, 1200A (toggle)



① Consult ABB for factory installed accessories.

② Trip unit with communication module.

③ Available on T7 toggle version only.

T1

100A, 600Y/347V, 480V Δ

Thermal-magnetic



T1

Dimensions 3P Fixed Version 5.12H x 3.00W x 2.76D
Weight 2.34 (lbs)

General

The T1 breaker family ranges from 15 through 100 amperes. The T1 trip units are non-interchangeable and use the very latest technology in electromagnetic relays for overcurrent trip protection. Thermal overload protection is provided by heat sensitive bimetals. Short circuit protection for the breaker is accomplished using a precise magnetic coil. State of the art construction in contacts and arcing chambers aid in limiting damaging fault currents through the protected circuits.

Standards

The UL489/CSA 22.2 version of T1 also carries an IEC-60947-2 rating.

Versions

The T1 frame is available in two versions:

- T = Thermal-magnetic, fixed
- D = Molded case switch

Performance levels

The T1 breaker has two performance levels available:

- B = Basic single pole
- N = Normal three pole

Number of poles

The T1 molded case circuit breaker is available in single, three and four pole versions. Estimate 4 pole pricing by adding 35% to the 3 pole price and contact your ABB sales person for details.

Molded case switches

UL489 switches include no overcurrent protection except for a high instantaneous trip mechanism for self protection.

UL489 / CSA C22.2 Interrupting capacity (kA RMS)

Voltage	Continuous rating	B (1 pole)	N
240VAC	15 – 100A	—	50 ①
347VAC	15A	10	—
	20 – 100A	14	—
480VAC Δ	15A ②	—	14
	20 – 100A	—	22
600Y/347VAC	15 – 100A	—	10
250VDC 2 pole series	15 – 100A	—	25
500VDC 3 pole series	15 – 100A	—	25

IEC 60947-2 Interrupting capacity (kA RMS)

Voltage	Continuous rating	B (1 pole)	N
230VAC	15 – 100A	25 ③	50
415VAC	15 – 100A	—	36
690VAC	15 – 100A	—	6
500VDC 3 pole series	15 – 100A	—	36

① In 15A 35kA @ 240VAC.
 ② 15A available in 480Y/277 VAC only.
 ③ Interrupting capacity for 16-20A is 16kA

T1

100A, 600Y/347V, 480V Δ

Thermal-magnetic/Molded Case Switch

T1B TMF – Single pole thermal magnetic fixed 1

Breaker	IC at 277VAC	Rating (A)	Magnetic trip (A)	1 pole, 277VAC catalog number
T1B	10kA	15	1000	T1B015TL-1
		20	1000	T1B020TL-1
	18kA	25	1000	T1B025TL-1
		30	1000	T1B030TL-1
		40	1000	T1B040TL-1
		50	1500	T1B050TL-1
		60	1500	T1B060TL-1
		70	1500	T1B070TL-1
		80	1500	T1B080TL-1
		90	1500	T1B090TL-1
		100	1500	T1B100TL-1

T1N TMF – 3 pole thermal magnetic fixed

Breaker	IC at 480VAC	Rating (A)	Magnetic trip (A)	3 pole, 600Y/347VAC/500VDC catalog number
T1N	14kA	15	1000	T1N015TL ②
		20	1000	T1N020TL
	22kA	25	1000	T1N025TL
		30	1000	T1N030TL
		40	1000	T1N040TL
		50	1500	T1N050TL
		60	1500	T1N060TL
		70	1500	T1N070TL
		80	1500	T1N080TL
		90	1500	T1N090TL
		100	1500	T1N100TL

T1N TMF – 100% Rated thermal-magnetic

Breaker	IC at 480VAC	Rating (A)	Magnetic trip (A)	3 pole, 600Y/347VAC/500VDC catalog number
T1N	14kA	15 ①	100	T1NQ015TL
		20	1000	T1NQ020TL
	22kA	25	1000	T1NQ025TL
		30	1000	T1NQ030TL
		40	1000	T1NQ040TL
		50	1500	T1NQ050TL
		60	1500	T1NQ060TL
		70	1500	T1NQ070TL
		80	1500	T1NQ080TL
		90	1500	T1NQ090TL
		100	1500	T1NQ100TL

T1N-D – Molded case switch

Breaker	Interrupting capacity ③	Rating (A)	Magnetic trip (A)	480VAC/500VDC catalog number
T1-D	240V, 50kA	100	1000	T1N100DL

① Electrical/mechanical accessories cannot be installed on single pole breakers.

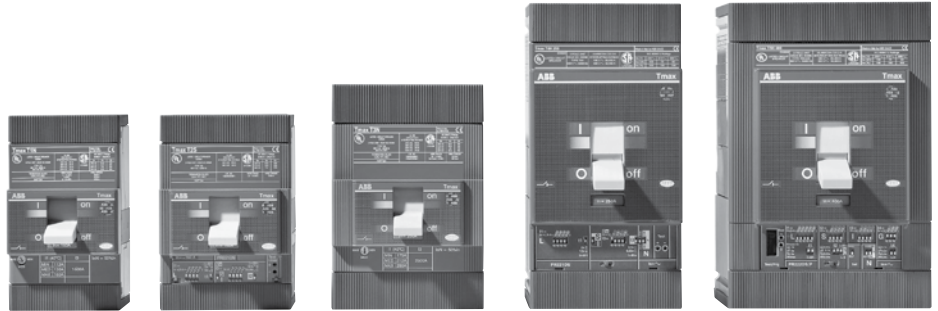
② Rated 480Y/277 VAC for 15A.

③ When protected by a OCPD with appropriate ratings.

Tmax Molded case circuit breakers



Tmax Molded case circuit breakers



Introduction

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The ABB Tmax line of circuit breakers, with a range up to 3000A, has several key features that go along with its very small size:

- Double insulation – this construction characteristic allows for the UL Listed field installation of internal accessories without exposure to energized parts.
- Complete range of electrical and mechanical accessories
- Positive operation – breakers from ABB ensure that the toggle indicates the precise position of the moving contacts. This guarantees safe and reliable signaling by the device.
- Installation – Tmax molded case circuit breakers can be installed in panels and switchboards in either the horizontal or vertical planes while being fed from either end without any derating of their performance characteristics.
- Interrupting ratings at 480VAC up to 150kAIC.
- Compact size
- All Tmax molded case circuit breakers are UL Listed and IEC rated for global application and acceptance.
- All versions of the Tmax family are suitable for reverse feed applications.

The ABB Tmax product line has the performance and accessories to satisfy all industry requirements in the 600VAC to 600VDC ranges.

Frame sizes — Nine basic sizes

The ABB Tmax series includes nine basic frame sizes as well as the T1 single pole with the range rated from 15A to 3000A at 480VAC. The various versions carry the following interrupting capacities:

- **B** Basic breaking capacity
- **N** Normal breaking capacity
- **S** Standard breaking capacity
- **H** High breaking capacity
- **L** Extra high breaking capacity
- **V** Very high breaking capacity

Derived versions

- Thermal magnetic
- Electronic
- Molded case switches
- Motor circuit protectors (MCPs)
- Direct current (DC) rated

ABB Tmax versions

- Fixed: all models
- Drawout or plug-in: T2, T3, Ts3, T4, T5, T6, T7 & T7M
- UL File #E93565 (breakers and MCPs)
#E116596 (Accessories)
#E116595 (Molded case switches)

Selection Guide

Circuit breakers for power distribution

T1 – Ts3



T1 1P



T1



T2



T3



Ts3

Type		Tmax T1 1p	Tmax T1	Tmax T2	Tmax T3	Tmax Ts3	Tmax Ts3	
Frame size	[A]	100	100	100	225	150	225	
Number of poles	[Nr]	1	3-4	3-4	3-4	2-3-4	2-3-4	
Rated voltage	AC (50-60Hz)	[V]	347	600Y/347	480	600Y/347	600	480
	DC	[V]		500		500	600	500
Interrupting ratings		B	N	S H	N S	N H L	N H L	
	240V AC	[kA rms]	50 ②	65 150	50 65	65 100 150	65 100 150	
	277V AC	[kA rms]	18 ①					
	347V AC	[kA rms]	14 ①					
	480V AC	[kA rms]		22 ②	35 65	25 35	25 50 85 ⑤	25 50 65
	600Y/347V AC	[kA rms]		10		10 10		
	600V AC	[kA rms]					14 14 25	
	250V DC (2 poles in series)	[kA rms]		25		25 35		
	500V DC (3 poles in series)	[kA rms]		25		25 35		
500V DC (2 poles in series)	[kA rms]					35 50 65	20 35 50	
600V DC (3 poles in series)	[kA rms]					20 35 50		
Trip units	TMF	■	■	■	■	■	■	
	TMD/TMA							
	ELT			■				
	MA			■	■	■	■	
	Electronic			■				
Dimensions	H	[in/mm]	5.12/130	5.12/130	5.12/130	5.9/150	6.7/170	6.7/170
	W 3p	[in/mm]	1/25.4	3/76	3.54/90	4.13/105	4.13/105	4.13/105
	D	[in/mm]	2.76/70	2.76/70	2.76/70	2.76/70	4.07/103.5	4.07/103.5
Mechanical life	[No. operations]	25000	25000	25000	25000	25000	25000	

① In15A = 10kA@277VAC 10kA@347VAC
 ② In15A = 35kA@240VAC 14kA@480Y/277 VAC
 ③ T5 600 with electronic trip units only and in three pole version
 ④ 2p breakers: available only in N interrupting rating
 ⑤ In from 15A up to 30A=65kA@480V AC

Selection Guide

Circuit breakers for power distribution

T4 – T8



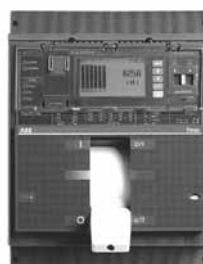
T4



T5



T6



T7



T8

Type		Tmax T4	Tmax T5	Tmax T6	Tmax T7/T7M	Tmax T8	
Frame size	[A]	250	400-600 ③	800	1000-1200	1600, 2000, 2500 & 3000	
Number of poles	[Nr]	2-3-4 ④	2-3-4 ④	3-4	3-4	3-4	
Rated voltage	AC (50-60Hz)	[V]	600	600	600	600	
	DC	[V]	600	600	600	600	
Interrupting ratings		N S H L V	N S H L V	N S H L	S H L	V	
	240V AC	[kA rms]	65 100 150 200 200	65 100 150 200 200	65 100 200 200	65 100 150	125
	277V AC	[kA rms]					
	347V AC	[kA rms]					
	480V AC	[kA rms]	25 35 65 100 150	25 35 65 100 150	35 50 65 100	50 65 100	125
	600Y/347V AC	[kA rms]					
	600V AC	[kA rms]	18 25 35 65 100	18 25 35 65 100	20 25 35 42	25 50 65	100
	250V DC (2 poles in series)	[kA rms]					
	500V DC (3 poles in series)	[kA rms]					
Trip units	TMF	■					
	TMD/TMA	■	■	■			
	ELT						
Dimensions	H	[in/mm]	8.07/205	8.07/205	10.55/268	10.55/268	
	W 3p	[in/mm]	4.13/105	5.51/140	8.26/210	8.26/210	
	D	[in/mm]	4.07/103.5	4.07/103.5	4.07/103.5	6.06/154 (toggle) 7/178 (motor)	
Mechanical life	[No. operations]	20,000	20,000	20,000	10,000	15,000	

① In15A = 10kA@277 VAC 10kA@347 VAC

② In15A = 35kA@240 VAC 14kA@480Y/277 VAC

③ T5 600 with electronic trip units only and in three pole version-

④ 2p T4N250 and T5N400 available only in N interrupting capacity.

⑤ In from 15A up to 30A=65kA@480 VAC

⑥ Applies to MCS only.

General information

Catalog number explanation

T3 S 080 T W - 4 xxx

● **Accessories** (added in alpha-numeric order) ①

- A = Auxiliary Switch
- S_ = Shunt trip with voltage code
- U_ = Undervoltage release with voltage code

● **Number of poles**

- 1 = 1 pole (T1 only)
- 2 = 2 pole
- 4 = 4 pole
- None = 3 pole

● **Type connectors**

- W = None
- L = Lugs included

● **Trip unit function**

- B = LS/I (AC only)
- D = Molded Case Switch (MCS)
- T = Thermal-magnetic
- M = Magnetic only (MCP)
- E5 = Electronic MCP (AC only)
- C = LSI (AC only)
- E = LSIG (AC only)
- CZ = LSI/PD ②
- EZ = LSIG/PD ②
- P = LI - LCD Display ③
- R = LSI - LCD Display ③
- S = LSIG - LCD Display ③

● **Current rating**

- 015 = 15A
- 080 = 80A
- 100 = 100A
- 225 = 225A
- 250 = 250A
- 400 = 400A
- 600 = 600A
- 800 = 800A
- 1200 = 1200A

● **Interrupting rating class**

- B = Basic
- N = Normal
- S = Standard
- H = High
- L = Extra High
- V = Very high
- Q = 100% Rated

● **Frame size**

- T1 = 100A
- T2 = 100A
- T3 = 225A
- Ts3 = 225A
- T4 = 250A
- T5 = 400A, 600A
- T6 = 600A, 800A
- T7 = 1000A, 1200A (toggle)



① Consult ABB for factory installed accessories.

② Trip unit with communication module.

③ Available on T7 toggle version only.

T1

100A, 600Y/347V, 480V Δ

Thermal-magnetic



T1

Dimensions 3P Fixed Version 5.12H x 3.00W x 2.76D
Weight 2.34 (lbs)

General

The T1 breaker family ranges from 15 through 100 amperes. The T1 trip units are non-interchangeable and use the very latest technology in electromagnetic relays for overcurrent trip protection. Thermal overload protection is provided by heat sensitive bimetals. Short circuit protection for the breaker is accomplished using a precise magnetic coil. State of the art construction in contacts and arcing chambers aid in limiting damaging fault currents through the protected circuits.

Standards

The UL489/CSA 22.2 version of T1 also carries an IEC-60947-2 rating.

Versions

The T1 frame is available in two versions:

- T = Thermal-magnetic, fixed
- D = Molded case switch

Performance levels

The T1 breaker has two performance levels available:

- B = Basic single pole
- N = Normal three pole

Number of poles

The T1 molded case circuit breaker is available in single, three and four pole versions. Estimate 4 pole pricing by adding 35% to the 3 pole price and contact your ABB sales person for details.

Molded case switches

UL489 switches include no overcurrent protection except for a high instantaneous trip mechanism for self protection.

UL489 / CSA C22.2 Interrupting capacity (kA RMS)

Voltage	Continuous rating	B (1 pole)	N
240VAC	15 – 100A	—	50 ①
347VAC	15A	10	—
	20 – 100A	14	—
480VAC Δ	15A ②	—	14
	20 – 100A	—	22
600Y/347VAC	15 – 100A	—	10
250VDC 2 pole series	15 – 100A	—	25
500VDC 3 pole series	15 – 100A	—	25

IEC 60947-2 Interrupting capacity (kA RMS)

Voltage	Continuous rating	B (1 pole)	N
230VAC	15 – 100A	25 ③	50
415VAC	15 – 100A	—	36
690VAC	15 – 100A	—	6
500VDC 3 pole series	15 – 100A	—	36

① In 15A 35kA @ 240VAC.
 ② 15A available in 480Y/277 VAC only.
 ③ Interrupting capacity for 16-20A is 16kA

T1

100A, 600Y/347V, 480V Δ

Thermal-magnetic/Molded Case Switch

T1B TMF – Single pole thermal magnetic fixed 1

Breaker	IC at 277VAC	Rating (A)	Magnetic trip (A)	1 pole, 277VAC catalog number
T1B	10kA	15	1000	T1B015TL-1
		20	1000	T1B020TL-1
	18kA	25	1000	T1B025TL-1
		30	1000	T1B030TL-1
		40	1000	T1B040TL-1
		50	1500	T1B050TL-1
		60	1500	T1B060TL-1
		70	1500	T1B070TL-1
		80	1500	T1B080TL-1
		90	1500	T1B090TL-1
		100	1500	T1B100TL-1

T1N TMF – 3 pole thermal magnetic fixed

Breaker	IC at 480VAC	Rating (A)	Magnetic trip (A)	3 pole, 600Y/347VAC/500VDC catalog number
T1N	14kA	15	1000	T1N015TL ②
		20	1000	T1N020TL
	22kA	25	1000	T1N025TL
		30	1000	T1N030TL
		40	1000	T1N040TL
		50	1500	T1N050TL
		60	1500	T1N060TL
		70	1500	T1N070TL
		80	1500	T1N080TL
		90	1500	T1N090TL
		100	1500	T1N100TL

T1N TMF – 100% Rated thermal-magnetic

Breaker	IC at 480VAC	Rating (A)	Magnetic trip (A)	3 pole, 600Y/347VAC/500VDC catalog number
T1N	14kA	15 ①	100	T1NQ015TL
		20	1000	T1NQ020TL
	22kA	25	1000	T1NQ025TL
		30	1000	T1NQ030TL
		40	1000	T1NQ040TL
		50	1500	T1NQ050TL
		60	1500	T1NQ060TL
		70	1500	T1NQ070TL
		80	1500	T1NQ080TL
		90	1500	T1NQ090TL
		100	1500	T1NQ100TL

T1N-D – Molded case switch

Breaker	Interrupting capacity ③	Rating (A)	Magnetic trip (A)	480VAC/500VDC catalog number
T1-D	240V, 50kA	100	1000	T1N100DL

① Electrical/mechanical accessories cannot be installed on single pole breakers.

② Rated 480Y/277 VAC for 15A.

③ When protected by a OCPD with appropriate ratings.