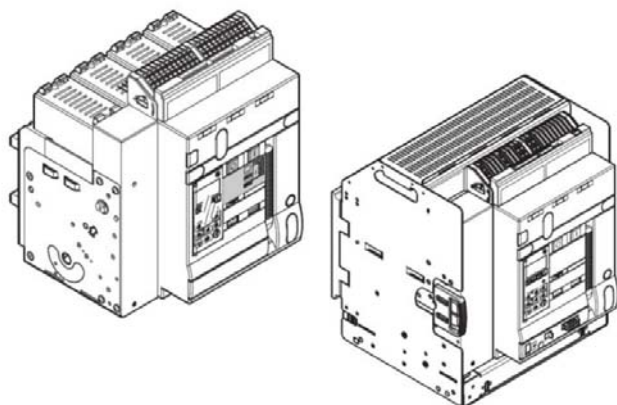


Megabreak circuit breakers and switch disconnectors

References: T803A3200 / 4000 / T804A3200 / 4000 / T803H3200 / 4000 / T804H3200 / 4000 / T803L3200 / 4000 / T804L3200 / 4000 / T803AE3200 / 4000 / T804AE3200 / 4000 / T803HE3200 / 4000 / T804HE3200 / 4000 / T803LE3200 / 4000 / T804LE3200 / 4000 / T803M3200 / 4000 / T804M3200 / 4000 / T803ME3200 / 4000 / T804ME3200 / 4000



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1. USE

Megabreak air circuit breakers offer optimal solutions to answer to protection requirements on the origin of the low voltage electrical installation (IEC/EN 60364-1) up to 4000A. Their electric and mechanical robustness, in addition to breaking capacity, maintenance and chances of accessorizing, are perfectly suited for these requirements.

2. RANGE

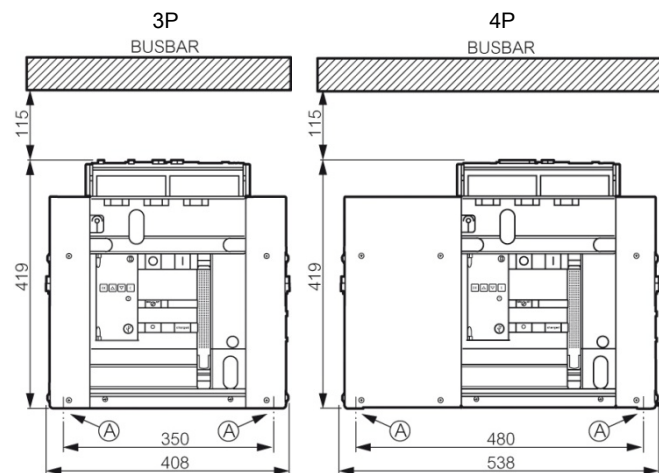
Megabreak circuit breakers						
Fixed version						
	50kA		65kA		100kA	
I _n (A)	3P	4P	3P	4P	3P	4P
3200	T803A3200	T804A3200	T803H3200	T804H3200	T803L3200	T804L3200
4000	T803A4000	T804A4000	T803H4000	T804H4000	T803L4000	T804L4000
Draw-out version						
	50kA		65kA		100kA	
I _n (A)	3P	4P	3P	4P	3P	4P
3200	T803AE3200	T804AE3200	T803HE3200	T804HE3200	T803LE3200	T804LE3200
4000	T803AE4000	T804AE4000	T803HE4000	T804HE4000	T803LE4000	T804LE4000

Megabreak switch disconnectors				
Fixed version		Draw-out version		
I _n (A)	3P	4P	3P	4P
3200	T803M3200	T804M3200	T803ME3200	T804ME3200
4000	T803M4000	T804M4000	T803ME4000	T804ME4000

3. DIMENSIONS

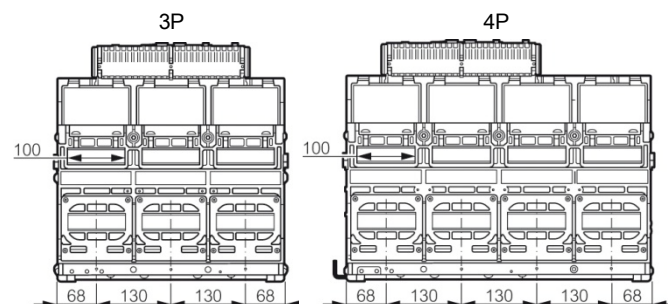
3.1 Fixed version

Frontal view



A = fixing point on plate of enclosure

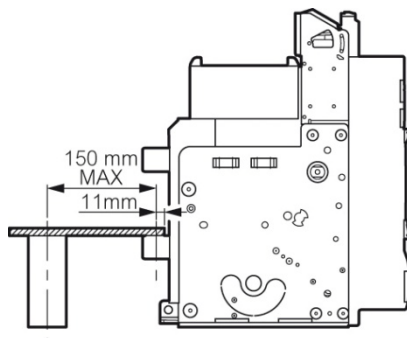
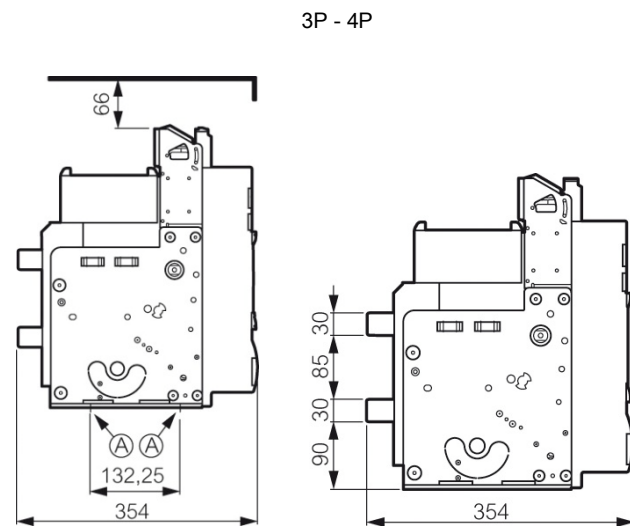
Rear view



Megabreak circuit breakers and switch disconnectors

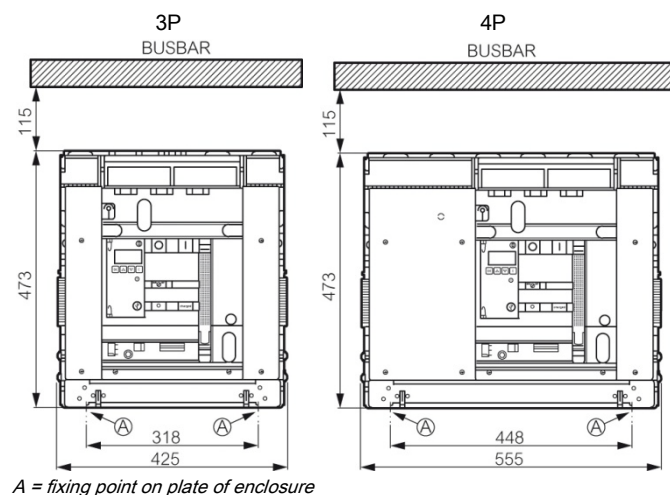
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Lateral view

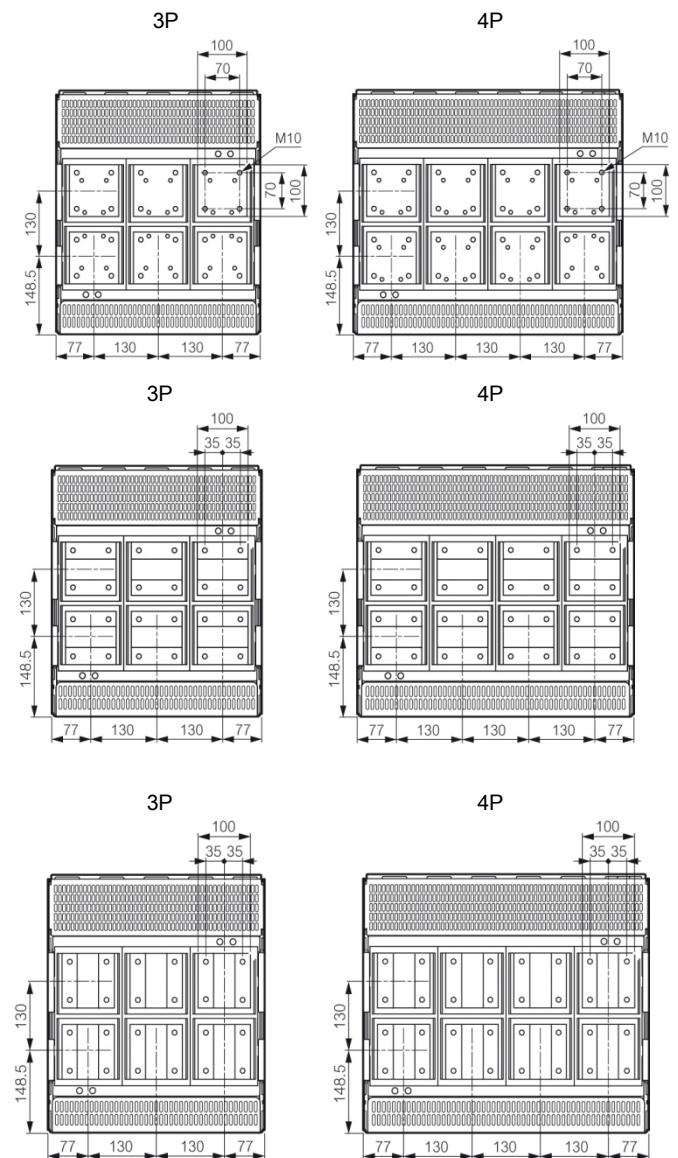


3.2 Draw-out version

Frontal view



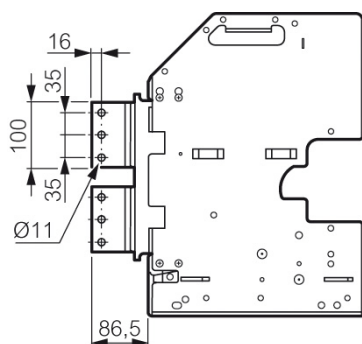
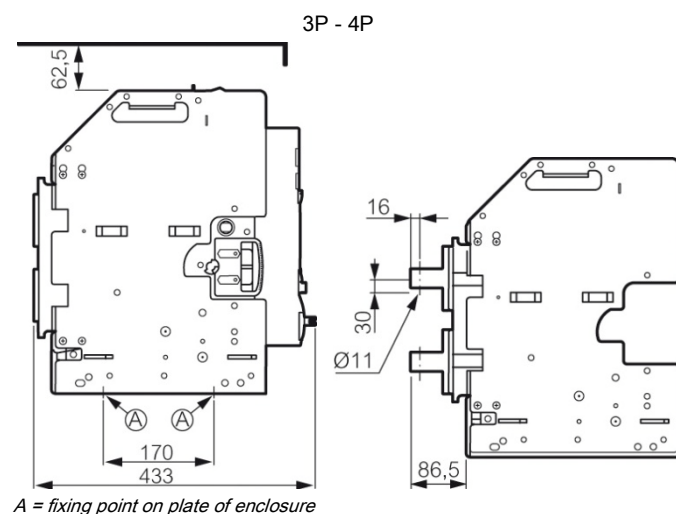
Rear view



Megabreak circuit breakers and switch disconnectors

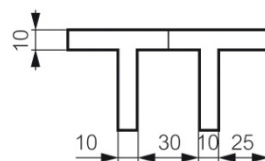
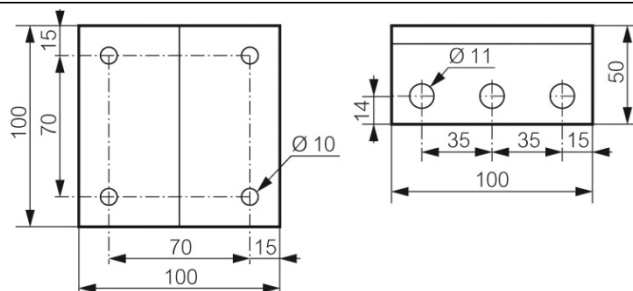
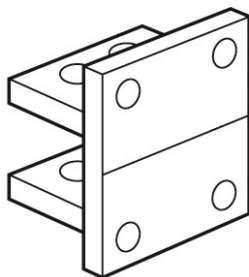
References: T803A3200 / 4000 / T804A3200 / 4000 / T803H3200 / 4000 / T804H3200 / 4000 / T803L3200 / 4000 / T804L3200 / 4000 / T803AE3200 / 4000 / T804AE3200 / 4000 / T803HE3200 / 4000 / T804HE3200 / 4000 / T803LE3200 / 4000 / T804LE3200 / 4000 / T803M3200 / 4000 / T804M3200 / 4000 / T803ME3200 / 4000 / T804ME3200 / 4000

Lateral view

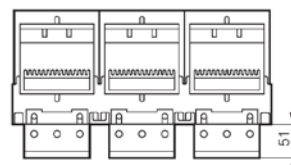
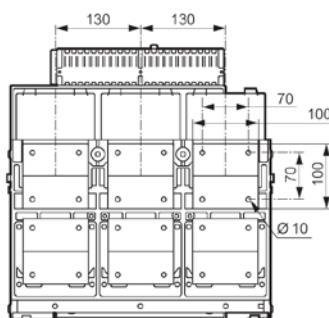


3.3 Rear terminals for fixed version – Flat connection

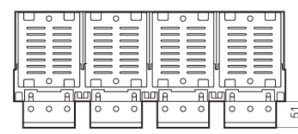
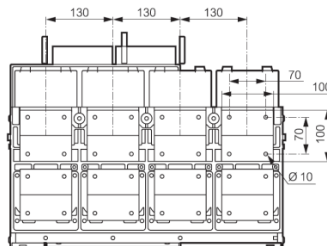
References	
3P	4P
MT8P3P2	MT8P4P2



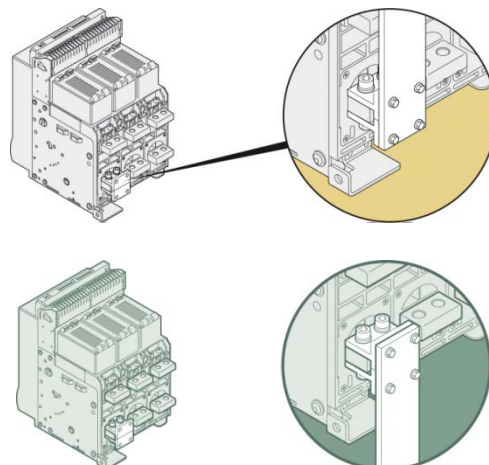
3P



4P



Mounting examples:

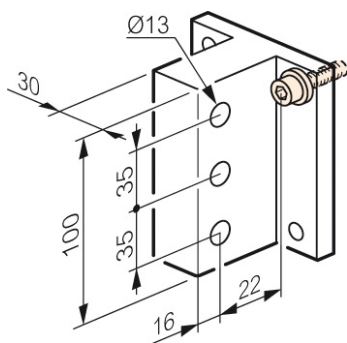


Megabreak circuit breakers and switch disconnectors

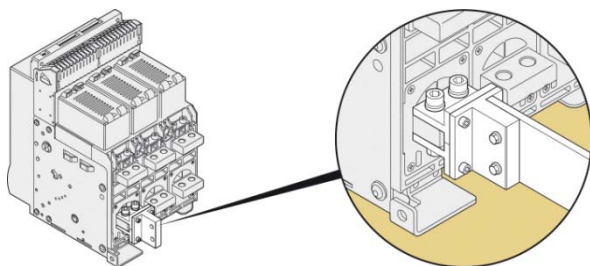
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3.4 Rear terminals for fixed version – Vertical connection

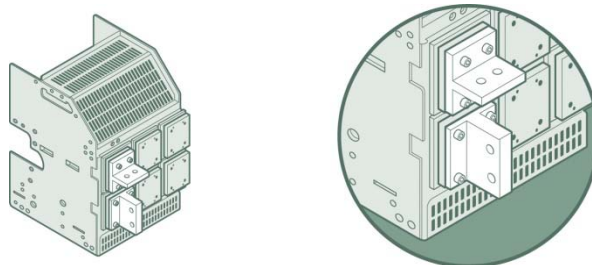
References	
3P	4P
MT8HV3P2	MT8HV4P2



Mounting example:

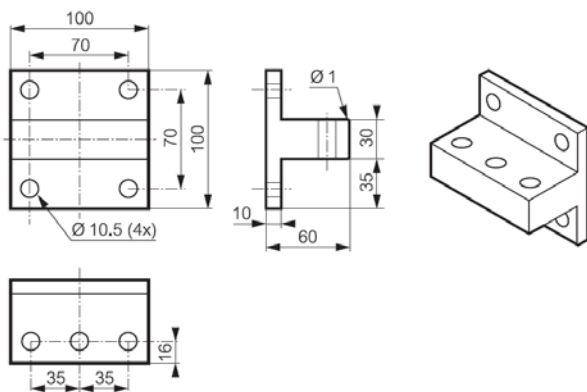


Mounting example:



3.5 Rear terminals for Draw-out version – Flat/vertical connection

References	
3P	4P
MT8HV3P2	MT8HV4P2



Megabreak circuit breakers and switch disconnectors

References: T803A3200 / 4000 / T804A3200 / 4000 / T803H3200 / 4000 / T804H3200 / 4000 / T803L3200 / 4000 / T804L3200 / 4000 / T803AE3200 / 4000 / T804AE3200 / 4000 / T803HE3200 / 4000 / T804HE3200 / 4000 / T803LE3200 / 4000 / T804LE3200 / 4000 / T803M3200 / 4000 / T804M3200 / 4000 / T803ME3200 / 4000 / T804ME3200 / 4000

4. OVERVIEW

4.1 Supplied with

ACBs are equipped with auxiliary contacts (4 NO/NC, expandable up to 10) and doorframe; besides:

- Fixed version: equipped with rear terminals for horizontal connections with bars.
- Draw-out version: equipped with flat rear terminals for connections with bars and delivered with base equipped with extraction crank and isolating components.
- Door sealing.

5. CONNECTIONS

Note: use only as a general guideline to select products. Due to extensive variety of switchgear constructions shapes and conditions that can affect the behaviour of the apparatus, the solution used must always be verified.

Minimum recommended dimensions of COPPER busbars per pole:

. Fixed and draw-out version

I _n (A)	Vertical bars (mm)	Horizontal bars (mm)
3200	3 bars 100 x 10	4 bars 80 x 10
4000	4 bars 100 x 10	5 bars 100 x 10

Minimum recommended dimensions of ALUMINIUM busbars per pole:

. Fixed and draw-out version

I _n (A)	Vertical bars (mm)	Horizontal bars (mm)
3200	4 bars 150 x 10	5 bars 150 x 10
4000	5 bars 150 x 10	6 bars 150 x 10

6. ELECTRICAL AND MECHANICAL CHARACTERISTICS

Circuit breaker

		Megabreak circuit breaker		
		Megabreak A	Megabreak H	Megabreak L
		50 kA	65 kA	100 kA
Frame current (A)		4000		
Number of poles		3P - 4P		
Rated current I _n (A)		3200 / 4000		
Release type		electronic		
Rated insulation voltage U _i (V)		1000		
Rated impulse withstand voltage U _{imp} (kV)		12		
Rated operational voltage (50/60Hz) U _e (V)		690		
Category of use		B		
Rated ultimate short-circuit breaking capacity I _{cu} (kA)	220 / 240 V AC	50	65	100
	380 / 415 V AC	50	65	100
	440 / 460 V AC	50	65	100
	480 / 500 V AC	50	65	100
	480 / 550 V AC	50	65	75
	600 V AC	50	65	75
	690 V AC	50	65	65
Rated service short-circuit breaking capacity I _{cs} (% I _{cu})		100%		
Rated short-circuit making capacity I _{cm} (kA)	220 / 240 V AC	105	143	220
	380 / 415 V AC	105	143	220
	440 / 460 V AC	105	143	220
	480 / 500 V AC	105	143	220
	480 / 550 V AC	105	143	165
	600 V AC	105	143	165
	690 V AC	105	143	143
Rated short time withstand current I _{sw} (kA) for t = 1s	220 / 240 V AC	50	65	85
	380 / 415 V AC	50	65	85
	440 / 460 V AC	50	65	85
	480 / 500 V AC	50	65	85
	480 / 550 V AC	50	65	75
	600 V AC	50	65	75
	690 V AC	50	65	65
Rated short time withstand current I _{sw} (kA) for t = 3s	220 / 240 V AC	50	65	65
	380 / 415 V AC	50	65	65
	440 / 460 V AC	50	65	65
	480 / 500 V AC	50	65	65
	480 / 550 V AC	50	65	65
	600 V AC	50	65	65
	690 V AC	50	65	65
Suitable for isolation		Yes		
Neutral protection for 4P version (% I _{nb})		0 - 50 - 100		
Endurance (cycles)	mechanical	10000 (w/o maintenance); 20000 (with maintenance)		
	electrical	10000 (w/o maintenance)		
Weight (Kg)	3P - Fixed	59		
	3P - Drawout	108		
	4P - Fixed	76		
	4P - Drawout	137		
Height (mm)	3P - Fixed	419		
	3P - Drawout	465		
	4P - Fixed	419		
	4P - Drawout	465		
Depth (mm)	3P - Fixed	354		
	3P - Drawout	433		
	4P - Fixed	354		
	4P - Drawout	433		
Width (mm)	3P - Fixed	408		
	3P - Drawout	425		
	4P - Fixed	538		
	4P - Drawout	555		
Temperature	operation	-25°C to +70°C		
	storage	-25°C to +85°C		
Maintenance		Yes (see specific guide)		

Megabreak circuit breakers and switch disconnectors

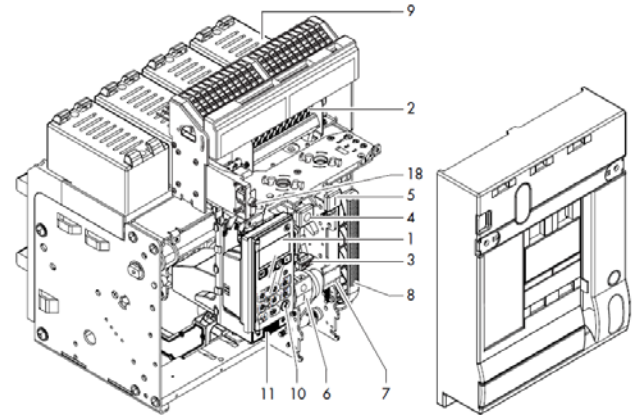
References: T803A3200 / 4000 / T804A3200 / 4000 / T803H3200 / 4000 / T804H3200 / 4000 / T803L3200 / 4000 / T804L3200 / 4000 / T803AE3200 / 4000 / T804AE3200 / 4000 / T803HE3200 / 4000 / T804HE3200 / 4000 / T803LE3200 / 4000 / T804LE3200 / 4000 / T803M3200 / 4000 / T804M3200 / 4000 / T803ME3200 / 4000 / T804ME3200 / 4000

Switch disconnector

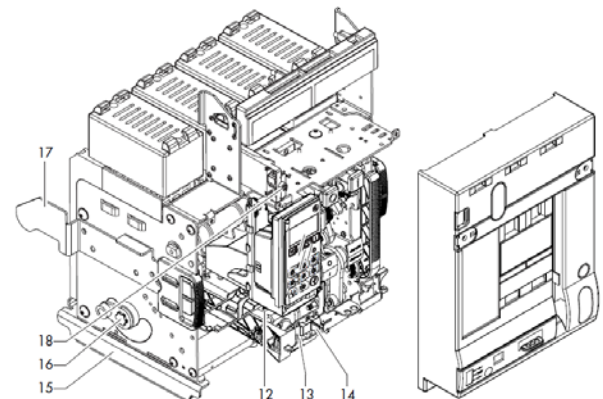
Megabreak switch disconnector		
Frame current (A)	4000	
Number of poles	3P - 4P	
Rated current I_n (A) at 40°C/50°C	3200 / 4000	
Rated insulation voltage U_i (V)	1000	
Rated impulse withstand voltage U_{imp} (kV)	12	
Rated operational voltage (50/60Hz) U_e (V)	690	
Category of use	AC23A	
Rated short circuit making capacity I_{cm} (kA)	220 / 240 V AC	187
	380 / 415 V AC	187
	440 / 460 V AC	187
	480 / 500 V AC	187
	480 / 550 V AC	165
	600 V AC	165
	690 V AC	143
Rated short time withstand current I_{cw} (kA) for $t = 1s$	220 / 240 V AC	85
	380 / 415 V AC	85
	480 / 500 V AC	85
	480 / 550 V AC	75
	600 V AC	75
	690 V AC	65
Rated short time withstand current I_{cw} (kA) for $t = 3s$	220 / 240 V AC	65
	380 / 415 V AC	65
	480 / 500 V AC	65
	480 / 550 V AC	65
	600 V AC	65
	690 V AC	65
Suitable for isolation	Yes	
Minimum opening time (ms)	15	
Maximum closing time (ms)	30	
Endurance (cycles)	mechanical	10000 (w/o maint.); 20000 (with maint.)
	electrical	10000 (w/o maint.)
Weight (Kg)	3P - Fixed	59
	3P - Drawout	108
	4P - Fixed	76
	4P - Drawout	137
Height (mm)	3P - Fixed	419
	3P - Drawout	465
	4P - Fixed	419
	4P - Drawout	465
Depth (mm)	3P - Fixed	354
	3P - Drawout	433
	4P - Fixed	354
	4P - Drawout	433
Width (mm)	3P - Fixed	408
	3P - Drawout	425
	4P - Fixed	538
	4P - Drawout	555
Temperature	operation	-25°C to +70°C
	storage	-25°C to +85°C
Maintenance	Yes (see specific guide)	

6.1 Main parts constituting the circuit breaker

Fixed version



Draw-out version

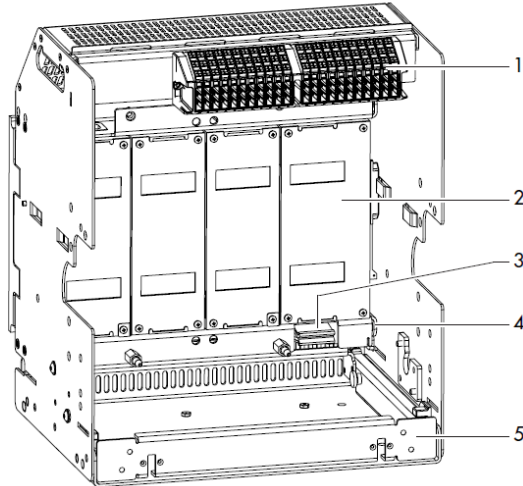


1. Protection Unit
2. Auxiliary Contacts
3. Reset button
4. OFF button
5. ON button
6. ON-OFF Indication
7. Spring Status Indication
8. Charging handle
9. Dejon cell
10. Mini USB cover
11. Battery cover
12. Draw-out mechanism
13. Draw-out bar insertion
14. Racking shutter
15. Support to place the breaker in draw-out cassette
16. Draw-out main shaft
17. Insertion guide
18. Dielectric test selector (if present)

Megabreak circuit breakers and switch disconnectors

References: T803A3200 / 4000 / T804A3200 / 4000 / T803H3200 / 4000 / T804H3200 / 4000 / T803L3200 / 4000 / T804L3200 / 4000 / T803AE3200 / 4000 / T804AE3200 / 4000 / T803HE3200 / 4000 / T804HE3200 / 4000 / T803LE3200 / 4000 / T804LE3200 / 4000 / T803M3200 / 4000 / T804M3200 / 4000 / T803ME3200 / 4000 / T804ME3200 / 4000

Draw-out base



1. Aux terminal block
2. Safety shutter
3. Earth connection
4. Earth terminal
5. Removable cassette

6.2 Regulated currents (I_n)

I_n (A)	Phases			
	I_r		I_{sd}	
	$0.4 \times I_n$	$1 \times I_n$	$1.5 \times I_{r \min}$	$10 \times I_{r \max}$
3200	1280	3200	1920	32000
4000	1600	4000	2400	40000

* For neutral adjustment, as explained in technical sheet, please consider the values $(0 - 0.5 - 1) \times I_r$.

6.3 Power losses per pole under I_n

Circuit breaker and switch disconnector

Power Losses (W) Megabreak			
Version		Fixed	Draw-out
Number of poles		3 - 4	
Rated current I_n (A)	3200	83.3	163.8
	4000	130.1	256.0

6.4 Deratings

6.4.1 Temperature

Temperature deratings for fixed versions – horizontal terminals

Temperature	Fixed version									
	up to 40°C		50°C		60°C		65°C		70°C	
	I_{max} (A)	I_r / I_n	I_{max} (A)	I_r / I_n	I_{max} (A)	I_r / I_n	I_{max} (A)	I_r / I_n	I_{max} (A)	I_r / I_n
Megabreak	3200	1	3200	1	3200	1	3200	1	3040	0.95
	4000	1	3800	0.95	3400	0.85	3200	0.8	3000	0.75

Temperature deratings for draw-out versions – horizontal terminals

Temperature	Draw-out version									
	up to 40°C		50°C		60°C		65°C		70°C	
	I_{max} (A)	I_r / I_n	I_{max} (A)	I_r / I_n	I_{max} (A)	I_r / I_n	I_{max} (A)	I_r / I_n	I_{max} (A)	I_r / I_n
Megabreak	3200	1	2880	0.9	2400	0.75	2400	0.75	2240	0.7
	4000	1	2880	0.7	2600	0.65	2600	0.65	2400	0.6

6.4.2 Altitude

Altitude (m)	< 2000	3000	4000	5000
Rated current (at 40°C/50°C) I_n (A)	I_n	$0.98 \times I_n$	$0.94 \times I_n$	$0.9 \times I_n$
Rated voltage U_e (V)	690	600	500	440
Rated insulation voltage U_i (V)	1000	900	750	600
Dielectric withstand (V)	3500	3200	2500	2000

Megabreak circuit breakers and switch disconnectors

References: T803A3200 / 4000 / T804A3200 / 4000 / T803H3200 / 4000 / T804H3200 / 4000 / T803L3200 / 4000 / T804L3200 / 4000 / T803AE3200 / 4000 / T804AE3200 / 4000 / T803HE3200 / 4000 / T804HE3200 / 4000 / T803LE3200 / 4000 / T804LE3200 / 4000 / T803M3200 / 4000 / T804M3200 / 4000 / T803ME3200 / 4000 / T804ME3200 / 4000

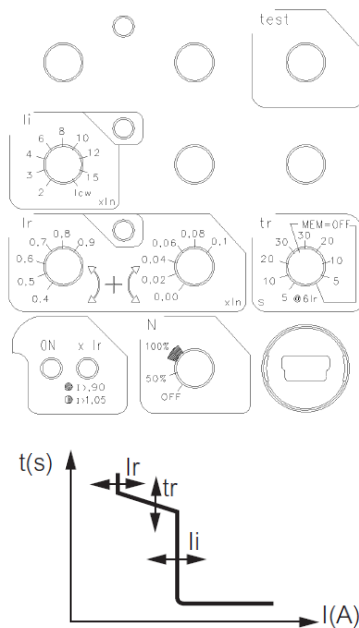
6.5 MP4 electronic protection unit

All MP4 protection units range has an integrated LCD screen to display electrical values, settings and logs. Adjustments are accomplished by selector switches.

All protection units have onboard a USB type "B" socket.

All protection units are equipped with batteries for powering in case of mains fault or when the breaker is open or not connected.

6.5.1 MP4 LI release (ref. MP4/BA) – Adjustment of I_r , t_r , I_i



Long delay protection against overloads with an adjustable threshold bases on the RMS value of the current:

- $I_r = (0.4 \div 1) \times I_n$ on two selectors (6 + 6 steps): (0.4 ÷ 0.9) by steps of 0.1 and (0.0 ÷ 0.1), by steps of 0.02
- t_r at $6 \times I_r$ (4 + 4 steps): 5-10-20-30 s (MEM ON) or 30-20-10-5 s (MEM OFF)

Short delay protection against short-circuits with fixed threshold:

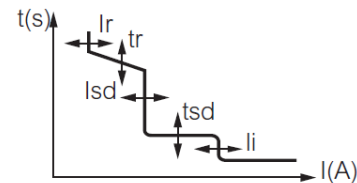
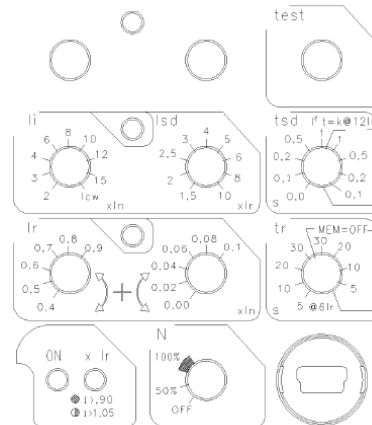
- $I_{sd} = 10 \times I_r$
- $t_{sd} = 1$ s

Instantaneous protection I_i with fixed threshold:

I_i (2 ÷ 15) $\times I_n$ or I_{cw} (9 steps) [$I_i = 2-3-4-6-8-10-12-15 \times I_n$ or I_{cw}]

Neutral adjustment = OFF – 0.5 $\times I_n$ – 1 $\times I_n$

6.5.2 MP4 LSI release (ref. MP4/SA) – Adjustment of I_r , t_r , I_{sd} , t_{sd} , I_i



Long delay protection against overloads with an adjustable threshold bases on the RMS value of the current:

- $I_r = (0.4 \div 1) \times I_n$ on two selectors (6 + 6 steps): (0.4 ÷ 0.9) by steps of 0.1 and (0.0 ÷ 0.1), by steps of 0.02
- t_r at $6 \times I_r$ (4 + 4 steps): 5-10-20-30 s (MEM ON) or 30-20-10-5 s (MEM OFF)

Short delay protection against short-circuits with an adjustable I_{sd} threshold:

- I_{sd} (1.5 ÷ 10) $\times I_r$ (9 steps) [$I_{sd} = 1.5-2-2.5-3-4-5-6-8-10 \times I_r$]
- $t_{sd} = 0-0.1-0.2-0.5-1$ s ($t = k$) or 1-0.5-0.2-0.1-0.01 s ($I^2t = k$)

Instantaneous protection I_i with fixed threshold:

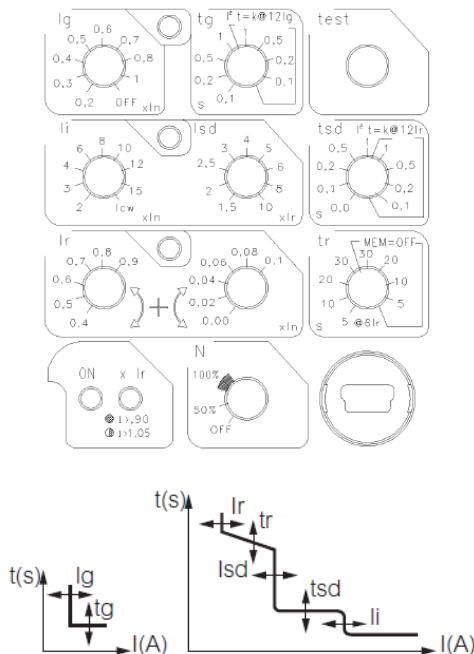
I_i (2 ÷ 15) $\times I_n$ or I_{cw} (9 steps) [$I_i = 2-3-4-6-8-10-12-15 \times I_n$ or I_{cw}]

Neutral adjustment = OFF – 0.5 $\times I_n$ – 1 $\times I_n$

Megabreak circuit breakers and switch disconnectors

References: T803A3200 / 4000 / T804A3200 / 4000 / T803H3200 / 4000 / T804H3200 / 4000 / T803L3200 / 4000 / T804L3200 / 4000 / T803AE3200 / 4000 / T804AE3200 / 4000 / T803HE3200 / 4000 / T804HE3200 / 4000 / T803LE3200 / 4000 / T804LE3200 / 4000 / T803M3200 / 4000 / T804M3200 / 4000 / T803ME3200 / 4000 / T804ME3200 / 4000

6.5.3 MP4 LSIg release (ref. MP4/TA) – Adjustment of I_r , t_r , I_{sd} , t_{sd} , I_i , I_g , t_g



Long delay protection against overloads with an adjustable threshold bases on the RMS value of the current:

- $I_r = (0.4 \div 1) \times I_n$ on two selectors (6 + 6 steps): (0.4 ÷ 0.9) by steps of 0.1 and (0.0 ÷ 0.1), by steps of 0.02
- t_r at $6 \times I_r$ (4 + 4 steps): 5-10-20-30 s (MEM ON) or 30-20-10-5 s (MEM OFF)

Short delay protection against short-circuits with an adjustable I_{sd} threshold:

- $I_{sd} (1.5 \div 10) \times I_r$ (9 steps) [$I_{sd} = 1.5-2-2.5-3-4-5-6-8-10 \times I_r$]
- $t_{sd} = 0-0.1-0.2-0.5-1$ s ($t = k$) or 1-0.5-0.2-0.1-0.01 s ($I^2t = k$)

Instantaneous protection I_i with fixed threshold:

$I_i (2 \div 15) \times I_n$ or I_{cw} (9 steps) [$I_i = 2-3-4-6-8-10-12-15 \times I_n$ or I_{cw}]

Neutral adjustment = OFF – $0.5 \times I_n$ – $1 \times I_n$

Adjustment for ground fault:

- $I_g (0.2 \div 1) \times I_n$ (9 steps) and OFF [$I_g = 0.2-0.3-0.4-0.5-0.6-0.7-0.8-1 \times I_n$; OFF]
- $t_g (0.1 \div 1)$ s (4 steps) (both $t = k$ and $I^2t = k$) [$t_g = 0.1-0.2-0.5-1$ s]

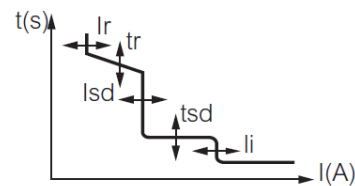
6.6 MP6 electronic protection unit

All MP6 protection units range has an integrated LCD colour touch screen to display electrical values, settings and logs and measurements. Adjustments are accomplished by icon menus.

All protection units have onboard a USB type "B" socket.

All protection units are equipped with batteries for powering in case of mains fault or when the breaker is open or not connected.

6.6.1 MP6 LSI release (ref. MP6SH) – Adjustment of I_r , t_r , I_{sd} , t_{sd} , I_i



Long delay protection against overloads with an adjustable threshold bases on the RMS value of the current:

- $I_r = (0.4 \div 1) \times I_n$ (with steps of 0.1)
- $t_r = 5-10-20-30$ s (MEM ON) or 5-10-20-30 s (MEM OFF)

Short delay protection against short-circuits with an adjustable I_{sd} threshold:

- $I_{sd} (1.5 \div 10) \times I_r$ (9 steps) [$I_{sd} = 1.5-2-2.5-3-4-5-6-8-10 \times I_r$]
- $t_{sd} = (0 \div 1)$ s (both for $t = k$ and $I^2t = k$, with steps of 0.1)

Instantaneous protection I_i with fixed threshold:

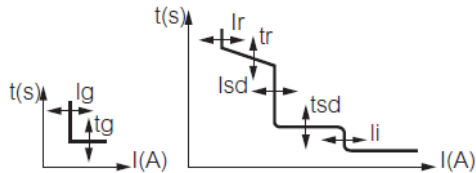
$I_i (2 \div 15) \times I_n$ or I_{cw} (9 steps) [$I_i = 2-3-4-6-8-10-12-15 \times I_n$ or I_{cw}]

Neutral adjustment = OFF – $0.5 \times I_n$ – $1 \times I_n$

Megabreak circuit breakers and switch disconnectors

References: T803A3200 / 4000 / T804A3200 / 4000 / T803H3200 / 4000 / T804H3200 / 4000 / T803L3200 / 4000 / T804L3200 / 4000 / T803AE3200 / 4000 / T804AE3200 / 4000 / T803HE3200 / 4000 / T804HE3200 / 4000 / T803LE3200 / 4000 / T804LE3200 / 4000 / T803M3200 / 4000 / T804M3200 / 4000 / T803ME3200 / 4000 / T804ME3200 / 4000

6.6.2 MP6 LSig release (ref. MP6TH) – Adjustment of I_r , t_r , I_{sd} , t_{sd} , I_i , I_g , t_g



Long delay protection against overloads with an adjustable threshold bases on the RMS value of the current:

- $I_r = (0.4 \div 1) \times I_n$ (with steps of 0.1)
- $t_r = 5-10-20-30$ s (MEM ON) or
5-10-20-30 s (MEM OFF)

Short delay protection against short-circuits with an adjustable I_{sd} threshold:

- $I_{sd} (1.5 \div 10) \times I_r$ (9 steps) [$I_{sd} = 1.5-2-2.5-3-4-5-6-8-10 \times I_r$]
- $t_{sd} = (0 \div 1)$ s (both for $t = k$ and $I^2t = k$, with steps of 0.1)

Instantaneous protection I_i with fixed threshold:

$I_i (2 \div 15) \times I_n$ or I_{cw} (9 steps) [$I_i = 2-3-4-6-8-10-12-15 \times I_n$ or I_{cw}]

Neutral adjustment = OFF – $0.5 \times I_n - 1 \times I_n$

Adjustment for ground fault:

- $I_g (0.2 \div 1) \times I_n$ and OFF
[$I_g = 0.2-0.3-0.4-0.5-0.6-0.7-0.8-1 \times I_n$; OFF]
- $t_g (0.1 \div 1)$ s (both $t = k$ and $I^2t = k$)
[$t_g = 0.1-0.2-0.5-1$ s]

6.7 Common accessories for protection units

- External auxiliary power supply ref. M8ALIM12

Input supply	24 V DC or AC @50-60Hz
Output current	250 mA
Operating temperature (°C)	-10 ÷ +55
Input power supply (W / VA)	≥ 5
Dimension	35mm Din rail: 2 modules

- Communication option ref. M8COM
- External neutral ref. M8TA
- Programmable output module ref. M7TICPROG

Input supply	24 V DC or AC @50-60Hz
Contact rated current (A)	AC: 250V 8A DC: 30V 8A; 110V 0.3A; 230V 0.12A
Operating temperature (°C)	-10 ÷ +55
Dimension	35mm Din rail: 6 modules

6.8 Batteries for protection units

All protection units are equipped with batteries for powering in case of mains fault or when the breaker is open or not connected. All settings, stored parameters and logs are kept saved on protection unit's memory also if batteries are removed to be replaced.

The protection unit has to be equipped with four CR2 Lithium batteries (voltage 3V).

7. CONFORMITY

Megabreak range of product concerning circuit-breakers and switch-disconnectors are in full compliance with the IEC/EN standard 60947-2 and 60947-3 respectively.

The certificate are issued by LOVAG and/or by IECEE CB-scheme certification scheme.

All the product range are CE, CCC, EAC marked. Other local markings are available.

DMX³ are full in compliance with the Shipping Register of Lloyds, RINA, Bureau Veritas.

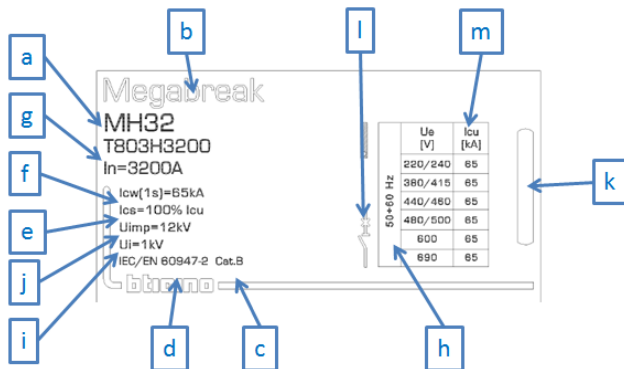
Particular conditions:

- execution II (all climates) according to IEC 60947-1 Annex Q, Cat. F.

Megabreak circuit breakers and switch disconnectors

References: T803A3200 / 4000 / T804A3200 / 4000 / T803H3200 / 4000 / T804H3200 / 4000 / T803L3200 / 4000 / T804L3200 / 4000 / T803AE3200 / 4000 / T804AE3200 / 4000 / T803HE3200 / 4000 / T804HE3200 / 4000 / T803LE3200 / 4000 / T804LE3200 / 4000 / T803M3200 / 4000 / T804M3200 / 4000 / T803ME3200 / 4000 / T804ME3200 / 4000

7.1 MARKING



Reference	Meaning
a	Product reference
b	Product type
c	Utilization Category
d	Standards compliance
e	Rated service short-circuit breaking capacity
f	Rated short-time withstand current
g	Rated current
h	Rated frequencies
i	Rated insulation voltage
j	Rated impulse withstand voltage
k	Coloured label for breaking capacity
l	Identification symbol of the device
m	Rated ultimate short-circuit breaking capacity, according to the operational voltage U_e

8. EQUIPMENTS AND ACCESSORIES

Note: where not specified, accessories are common for every Megabreak (circuit breaker and switch disconnector)

8.1 Control and signalling auxiliaries

- shunt trip: when energised the circuit breaker will be tripped

24 V AC and DC	ref. M8T024C
48 V AC and DC	ref. M8T048C
110 ÷ 130 V AC and DC	ref. M8T110C
220 ÷ 250 V AC and DC	ref. M8T230C
415 ÷ 480 V AC	ref. M8T415

Rated operating voltage (U_e)	AC: 24V;48V;110V ÷ 130V;220V ÷ 250V;415V/440V/480V DC: 24V; 48V; 110V ÷ 130V; 220V ÷ 250V
Voltage range ($\%U_e$)	70 ÷ 110
Pick-up consumption (W / VA)	500 / 500
Pick-up time (ms)	180
Hold consumption (W / VA)	5 / 5
Minimum opening time (ms)	30
Insulation voltage (kV)	2.5

- undervoltage releases: when the coil is de-energised, the circuit breaker will be tripped

24 V AC and DC	ref. M8M024C
48 V AC and DC	ref. M8M048C
110 ÷ 130 V AC and DC	ref. M8M110C
220 ÷ 250 V AC and DC	ref. M8M230C
415 ÷ 480 V AC	ref. M8M415

Rated operating voltage (U_e)	AC: 24V;48V;110V ÷ 130V;220V ÷ 250V;415V/440V/480V DC: 24V; 48V; 110V ÷ 130V; 220V ÷ 250V
Voltage range ($\%U_e$)	85 ÷ 110
Pick-up consumption (W / VA)	500 / 500
Pick-up time (ms)	180
Hold consumption (W / VA)	5 / 5
Minimum opening time (ms)	60
Insulation voltage (kV)	2.5

- Modules for delayed tripping, to be used with undervoltage releases

110 V AC and DC	ref. M8MR110C
230 V AC and DC	ref. M8MR230C

Rated operating voltage (U_e)	AC: 110V / 230V DC: 110V / 230V
Voltage range ($\%U_e$)	85 ÷ 110
Pick-up consumption (W / VA)	16.5 (@110V) / 34.5 (@230V)
Time delay (s)	1 ⁽¹⁾
Hold consumption (W / VA)	5 (@110V) / 10 (@230V)
Opening threshold	0.35 ÷ 0.7 U_n
Closing threshold	0.85 U_n
Operating temperature (°C)	-10 ÷ +55

⁽¹⁾ It is possible to connect up to 3 modules - 1s of delay for each module installed

Megabreak circuit breakers and switch disconnectors

References: T803A3200 / 4000 / T804A3200 / 4000 / T803H3200 / 4000 / T804H3200 / 4000 / T803L3200 / 4000 / T804L3200 / 4000 / T803AE3200 / 4000 / T804AE3200 / 4000 / T803HE3200 / 4000 / T804HE3200 / 4000 / T803LE3200 / 4000 / T804LE3200 / 4000 / T803M3200 / 4000 / T804M3200 / 4000 / T803ME3200 / 4000 / T804ME3200 / 4000

• Motor operators

To motorize a Megabreak, it is possible to attach, to the motor operators, a release coil (undervoltage or trip on energising) and a closing coil

24 V AC and DC	ref. M8MT024C
48 V AC and DC	ref. M8MT048C
110 ÷ 130 V AC and DC	ref. M8MT110C
220 ÷ 250 V AC and DC	ref. M8MT230C
415 ÷ 440 V AC	ref. M8MT415
480 V AC and DC	ref. M8MT480

Rated operating voltage (U_c)	AC: 24V;48V;110V ÷ 130V;220V÷250V;415V ÷ 440V;480V DC: 24V; 48V; 110V ÷ 130V; 220V ÷ 250V
Voltage range (%U_c)	85 ÷ 110
Maximum Power consumption (W / VA)	240/240
Maximum peak current for 80ms	(2 ÷ 3) x I _n
Charging time (s)	7
Operating frequency (n° / min)	1

• Closing coils

To enable remote closing of the circuit breaker if the closing spring is charged

24 V AC and DC	ref. M8C024C
48 V AC and DC	ref. M8C048C
110 ÷ 130 V AC and DC	ref. M8C110C
220 ÷ 250 V AC and DC	ref. M8C230C
415 ÷ 480 V AC	ref. M8C415

Rated operating voltage (U_c)	AC: 24V;48V;110V ÷ 130V;220V ÷ 250V;415V/440V/480V DC: 24V; 48V; 110V ÷ 130V; 220V ÷ 250V
Voltage range (%V_n)	85 ÷ 110
Pick-up consumption (W / VA)	500 / 500
Pick-up time (ms)	180
Hold consumption (W / VA)	5 / 5
Maximum closing time (ms)	50
Insulation voltage (kV)	2.5

• Signalling contact for draw-out version

Inserted / test / draw-out signalling contact

3 changeover contacts per position ref. M8POS		
Rated operating voltage (U_c)	DC	250V 0.3A 125V 0.6A
	AC	250V 16A 125V 16A

• Contact "ready to close" with charged springs ref. M8PC

Rated operating voltage (U_c)	AC	250V 16A 125V 16A
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• Additional signalling contact ref. M8AGG

Rated operating voltage (U_c)	DC	250V 0.3A 125V 0.6A
	AC	250V 16A 125V 16A

• Signalling contact for auxiliaries (ST, CC and UVR)

ref. M8AUX

Rated operating voltage (U_c)	DC	250V 0.3A 125V 0.6A
	AC	250V 16A 125V 16A

8.2 Locking

- Key locking in "open" position
 - 1 lock + 1 Profalux star type flat key ref. MT805AP
 - 1 lock + 1 Ronis type flat key ref. MT805AR
 - 2 holes support frame for locks ref. MT805A

• Key locking in "draw-out" position

- Mounting of the lock on the base
- Lock and key Profalux type star key ref. MT805EP
- Lock and key Ronis type flat key ref. MT805ER

• Door locking

- Prevents opening of the door with the circuit breaker closed
- Left-hand and right-hand side mounting ref. MT807SD

• Padlocks in "open" position

- Padlocking system for ACB (padlock not supplied) ref. MT807OP
- Padlock for buttons ref. MT807LT
- Padlocking for shutters (padlock not supplied) ref. MT805SS

8.3 Accessories

- Mechanical operations counter: to count total number of operation cycles of device ref. MT807CM

- Rating mis-insertion device: to prevent the insertion of a draw-out circuit breaker into an incompatible base ref. MT806AT

- Lifting plate ref. MT809PS

8.4 Fixing devices for Megabreak

To integrate Megabreak into MAS enclosures ranges (fixing plates, metal faceplates for circuit breakers and cable sleeves, etc...) see specific instruction sheets.

8.5 Equipment for conversion of a fixed device into draw-out device

- Bases for draw-out device
 - 3P ref. M803B2
 - 4P ref. M804B2

• Transformation kit for draw-out version

- 3P ref. M803P2
- 4P ref. M804P2

Megabreak circuit breakers and switch disconnectors

References: T803A3200 / 4000 / T804A3200 / 4000 / T803H3200 / 4000 / T804H3200 / 4000 / T803L3200 / 4000 / T804L3200 / 4000 / T803AE3200 / 4000 / T804AE3200 / 4000 / T803HE3200 / 4000 / T804HE3200 / 4000 / T803LE3200 / 4000 / T804LE3200 / 4000 / T803M3200 / 4000 / T804M3200 / 4000 / T803ME3200 / 4000 / T804ME3200 / 4000

8.6 Equipment for interlocking

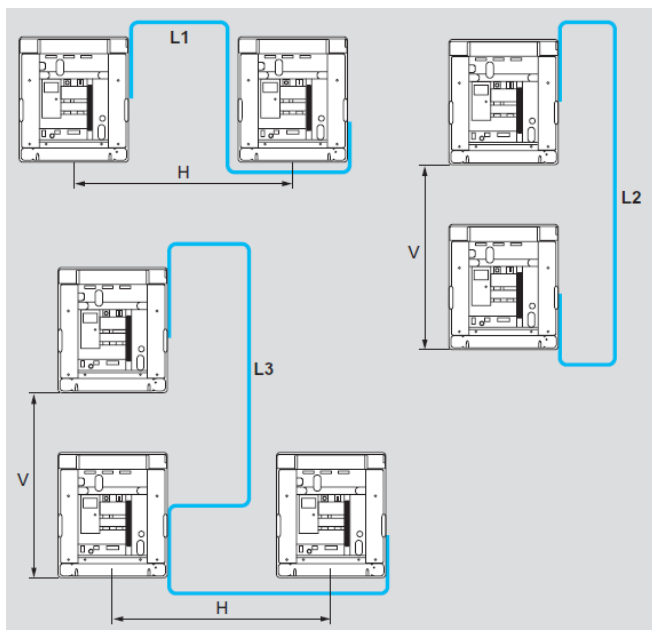
The mechanical interlock is set up using cables and can interlock 2 or 3 devices, which may be different type in a vertical or horizontal configuration. The interlock unit is mounted on the right-hand side of the device. Interlock cables to be ordered separately.

- Interlock mechanism ref. MT817F2

8.7 Interlock cables

- 1000 mm ref. MT807M7
- 1500 mm ref. MT807M8
- 2600 mm ref. MT807M1
- 3000 mm ref. MT807M2
- 3600 mm ref. MT807M3
- 4000 mm ref. MT807M4
- 4600 mm ref. MT807M5
- 5600 mm ref. MT807M6

Choice of interlock cable



Calculation of cable length:

$$L1 = 1430 + H$$

$$L2 = 1570 + V$$

$$L3 = 1430 + V + H$$

8.8 Rear terminals

- For fixed version

For flat connections with bars, 3P ref. MT8P3P2

For flat connections with bars, 4P ref. MT8P4P2

For vertical connections with bars, 3P ref. MT8HV3P2

For vertical connections with bars, 4P ref. MT8HV4P2

Note 1: refs. MT8P3P2 / MT8P4P2 to be fixed onto horizontal rear terminals of the circuit breaker

Note 2: refs. MT8HV3P2 / MT8HV4P2 to be used to transform a flat connection into a vertical one. To be fixed onto Cat.Nos MT8P3P2 / MT8P4P2 according to the number of poles.

- For draw-out version

For vertical or horizontal connections with bars, 3P ref. MT8HV3P2

For vertical or horizontal connections with bars, 4P ref. MT8HV4P2

Note: to be fixed directly onto plate rear terminals of the circuit breaker

8.9 Insulating shields

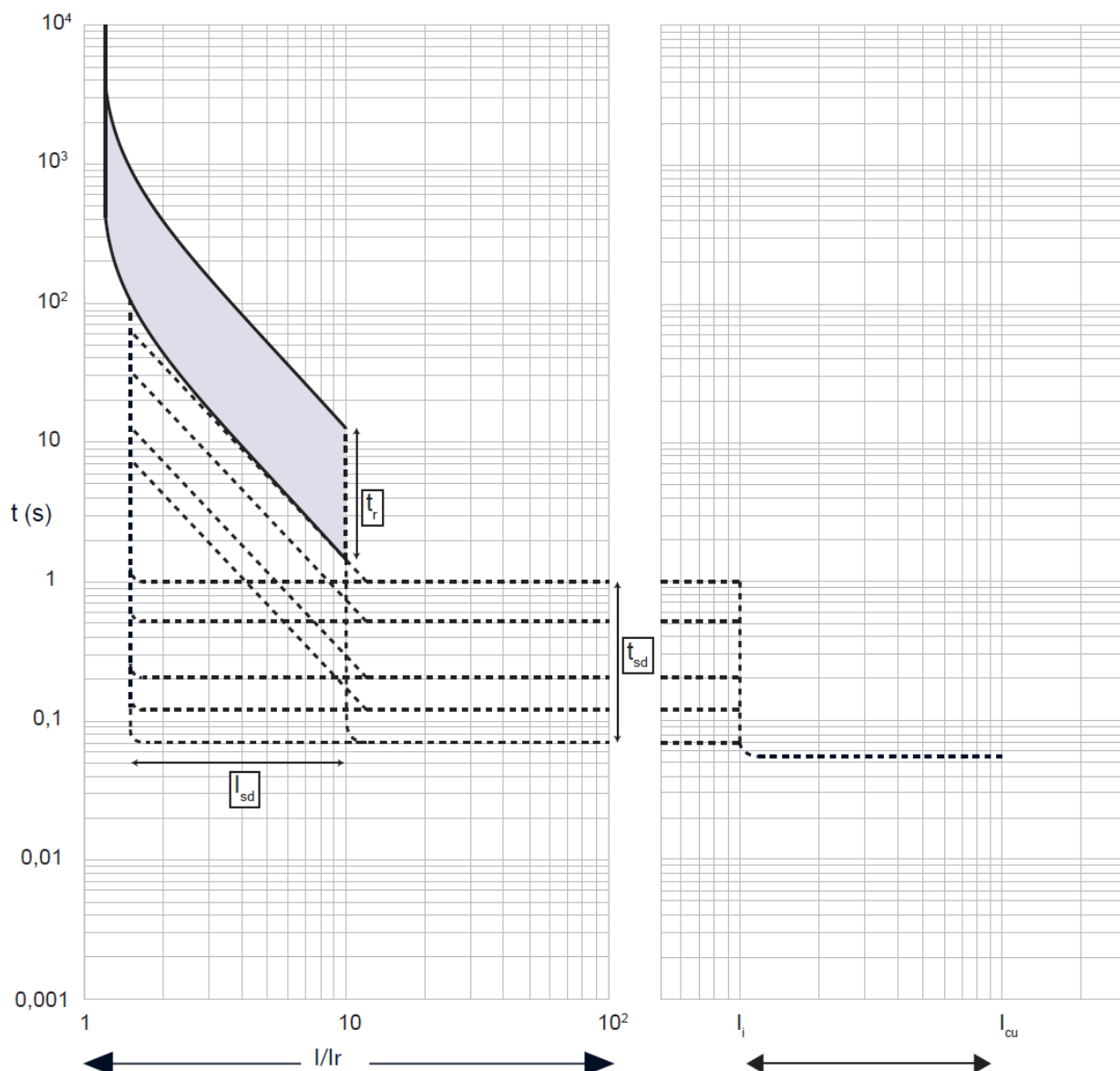
- Fixed version 3P ref. MT8SF3P
- Fixed version 4P ref. MT8SF4P
- Draw-out version 3P ref. MT8SE3P
- Draw-out version 4P ref. MT8SE4P

Megabreak circuit breakers and switch disconnectors

References: T803A3200 / 4000 / T804A3200 / 4000 / T803H3200 / 4000 / T804H3200 / 4000 / T803L3200 / 4000 / T804L3200 / 4000 / T803AE3200 / 4000 / T804AE3200 / 4000 / T803HE3200 / 4000 / T804HE3200 / 4000 / T803LE3200 / 4000 / T804LE3200 / 4000 / T803M3200 / 4000 / T804M3200 / 4000 / T803ME3200 / 4000 / T804ME3200 / 4000

9. CURVES

9.1 TRIPPING CURVE FOR MP4 protection units

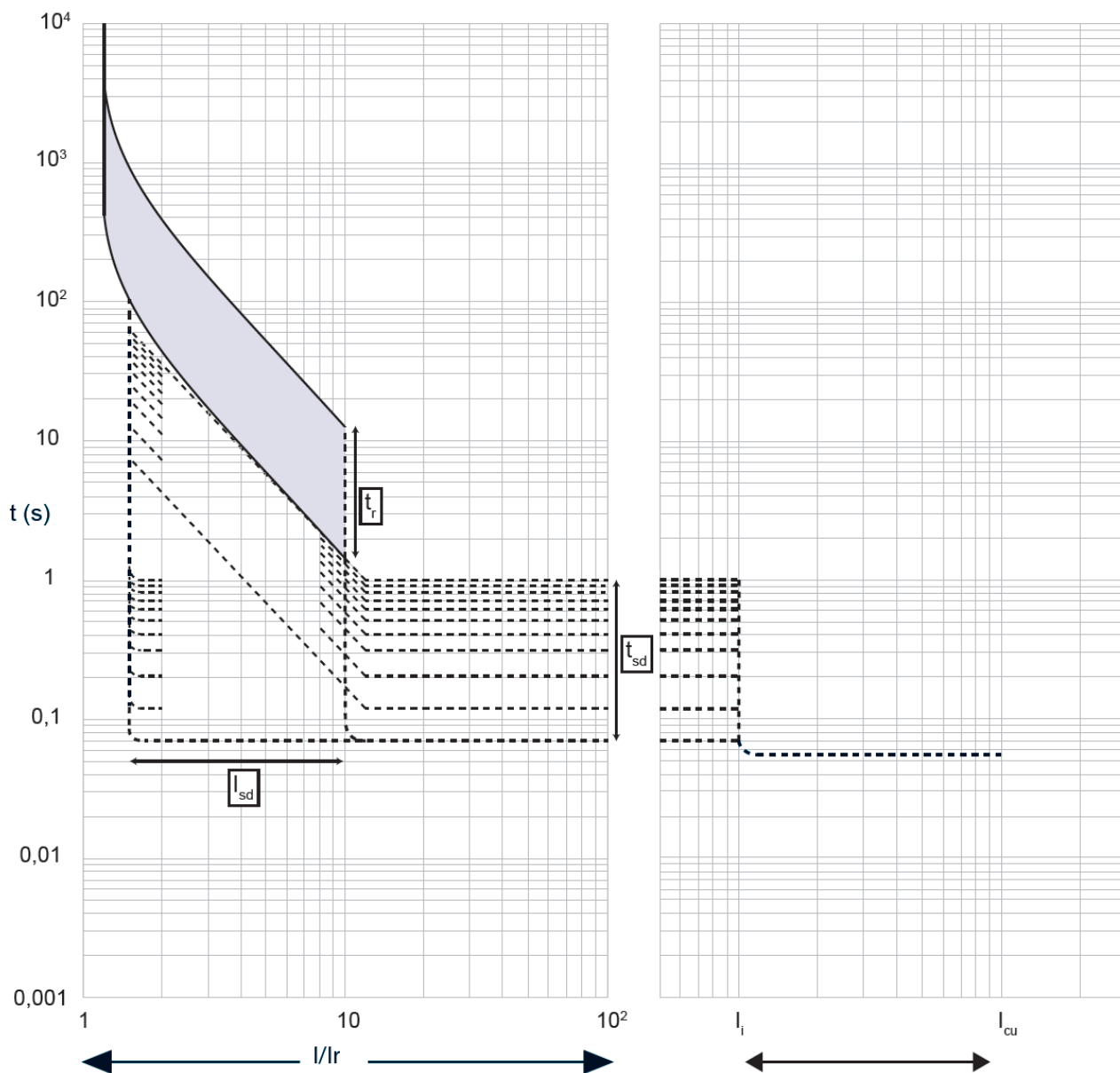


Value	Description
t	time
I	current
I_r	long time setting current
t_r	long time delay
I_{sd}	short time setting current
t_{sd}	short time delay
I_i	Instantaneous release
I_{cu}	Rated ultimate short-circuit breaking capacity

Megabreak circuit breakers and switch disconnectors

References: T803A3200 / 4000 / T804A3200 / 4000 / T803H3200 / 4000 / T804H3200 / 4000 / T803L3200 / 4000 / T804L3200 / 4000 / T803AE3200 / 4000 / T804AE3200 / 4000 / T803HE3200 / 4000 / T804HE3200 / 4000 / T803LE3200 / 4000 / T804LE3200 / 4000 / T803M3200 / 4000 / T804M3200 / 4000 / T803ME3200 / 4000 / T804ME3200 / 4000

9.2 TRIPPING CURVE FOR MP6 protection units



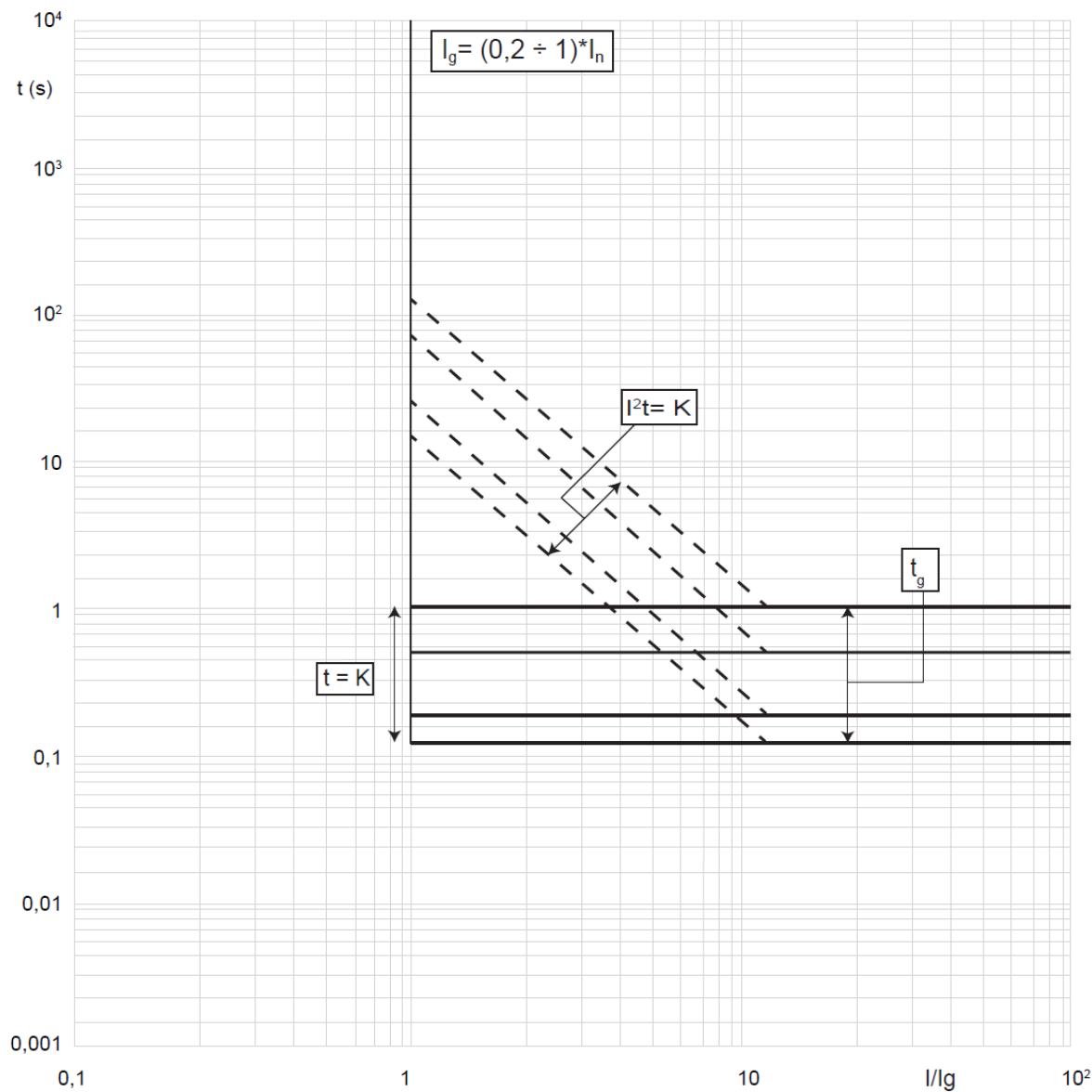
Value	Description
t	time
I	current
I_r	long time setting current
t_r	long time delay
I_{sd}	short time setting current
t_{sd}	short time delay
I_i	Instantaneous release
I_{cu}	Rated ultimate short-circuit breaking capacity

Megabreak circuit breakers and switch disconnectors

References: T803A3200 / 4000 / T804A3200 / 4000 / T803H3200 / 4000 / T804H3200 / 4000 / T803L3200 / 4000 / T804L3200 / 4000 / T803AE3200 / 4000 / T804AE3200 / 4000 / T803HE3200 / 4000 / T804HE3200 / 4000 / T803LE3200 / 4000 / T804LE3200 / 4000 / T803M3200 / 4000 / T804M3200 / 4000 / T803ME3200 / 4000 / T804ME3200 / 4000

9.3 GROUND FAULT TRIPPING CURVE

Only LSIg releases (MP4 and MP6)

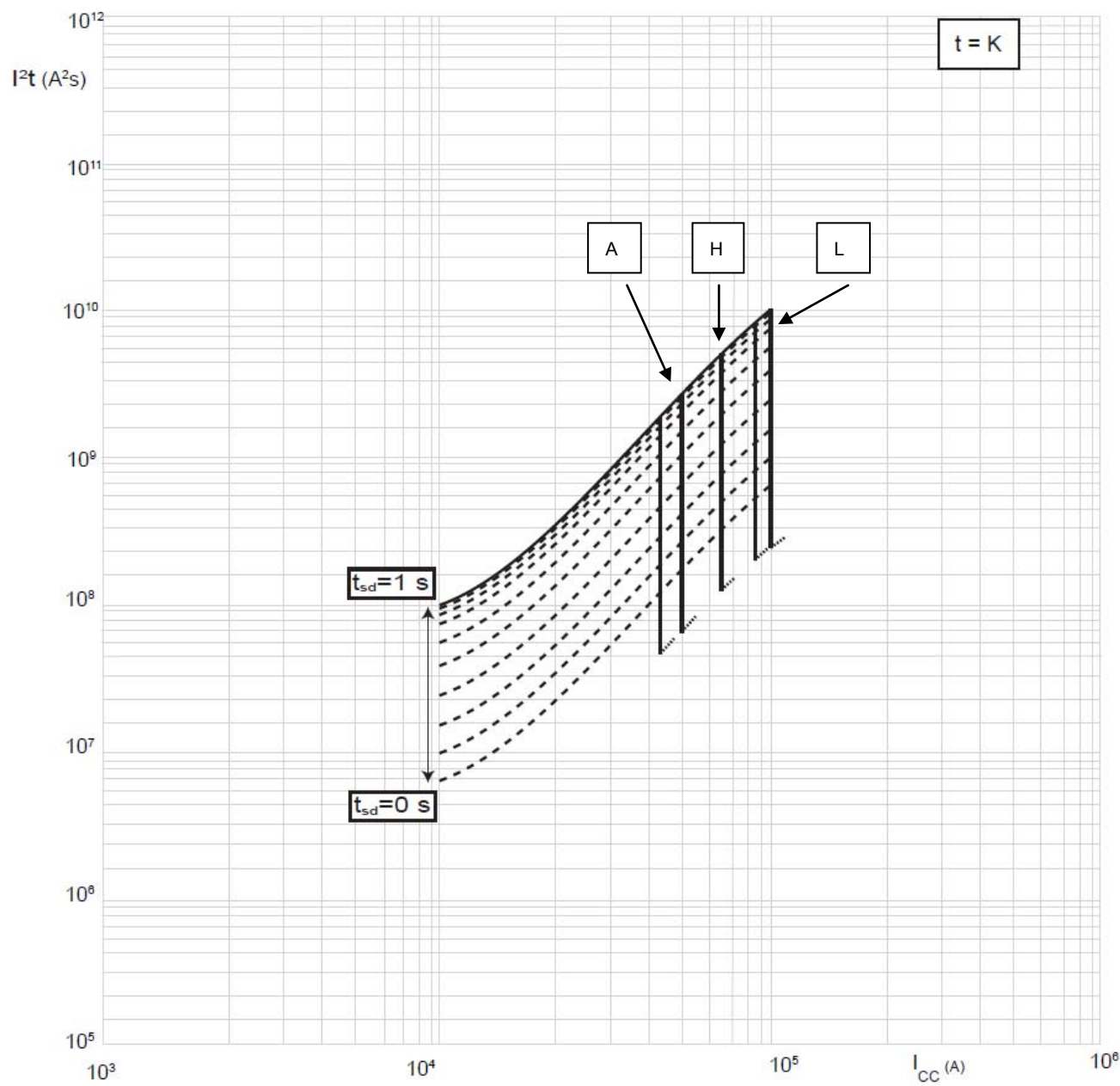


Value	Description
t	time
I	current
I_n	rated current
I_g	Ground fault current
$t = k$	Constant tripping time setting
$I^2t = k$	Constant pass-through energy setting

Megabreak circuit breakers
and switch disconnectors

References: T803A3200 / 4000 / T804A3200 / 4000 / T803H3200 / 4000 / T804H3200 / 4000 / T803L3200 / 4000 / T804L3200 / 4000 / T803AE3200 / 4000 / T804AE3200 / 4000 / T803HE3200 / 4000 / T804HE3200 / 4000 / T803LE3200 / 4000 / T804LE3200 / 4000 / T803M3200 / 4000 / T804M3200 / 4000 / T803ME3200 / 4000 / T804ME3200 / 4000

9.4 PASS-THROUGH SPECIFIC ENERGY CURVE ($U_0 = 415V$)



Value	Description
I_{cc}	short circuit current
I^2t	pass-through specific energy