

Megatiker M4 630 electronic circuit breakers

Reference(s) :

T743F2500x;T743F3200x;T743F4000x;T743F5000x;T743F6300x;T744F2500x;44F3200x;T744F4000x;T744F5000x;T744F6300x;T743N2500x;T743N3200x;T743N4000x;T743N5000x;T743N6300x;T744N2500x;T744N3200x;T744N4000x;T744N5000x;T744N6300x;
T743H2500x;T743H3200x;T743H4000x;T743H5000x;T743H6300x;T744H2500x;44H3200x;T744H4000x;T744H5000x;T744H6300x;T744L2500x;T744L3200x;T744L4000x;T744L5000x;T744L6300x;T744L000x;T744L5000x;T744L6300x;

$$X = EB / E / M / T / MT$$


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1. USE

DPX³ platform, for premium segment, is able to cover extended ranges in terms of breaking capacities and rated currents, make protection suitable for different levels of power involved in installations.

DPX³ platform provide easy assembly procedures during the phase of installation and mounting of accessories, suitable for professional use.

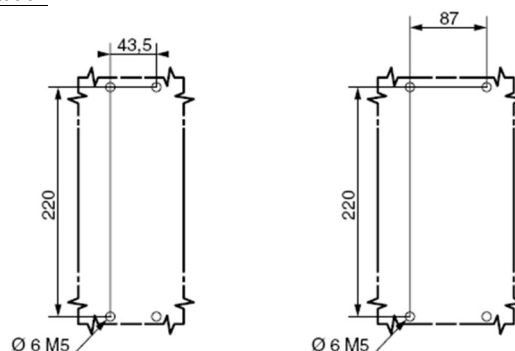
2. RANGE

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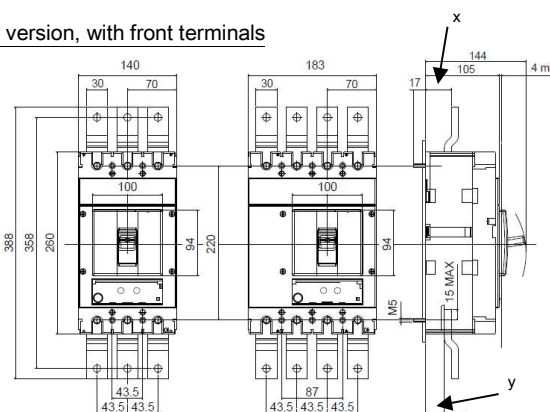
3. DIMENSIONS AND WEIGHTS

3.1 Dimensions

Implantation

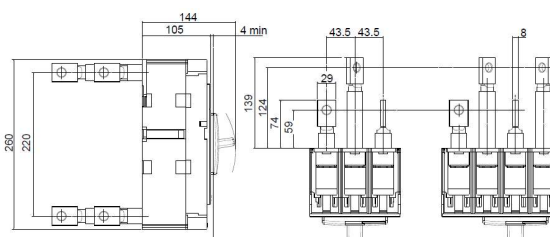


Fixed version, with front terminals



	$I_n < 400$	$I_n \geq 500$ A
x	37	39
y	27	20

Fixed version, with flat rear terminal

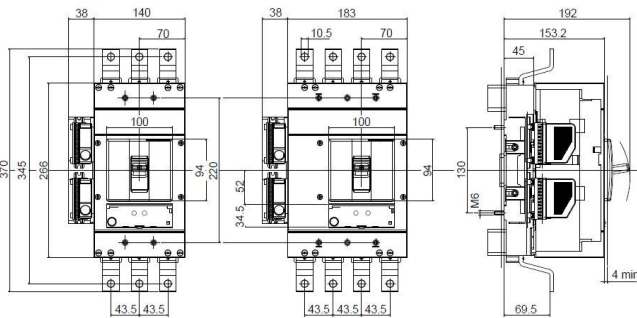


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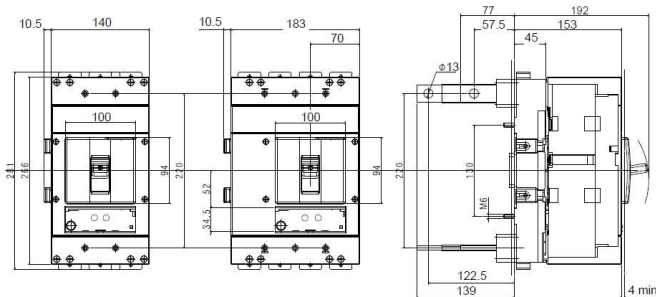
Reference(s) :

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T744F630oc; T744N250oc; T743N320oc; T743N400oc; T743N500oc; T743N630oc; T744N250oc; T744N320oc;
T744N400oc; T744N500oc; T744N630oc;
T743H250oc; T743H320oc; T743H400oc; T743H500oc; T743H630oc; T744H250oc; 44H320oc; T744H400oc; T744H500oc;
x; T744H630oc; T743L250oc; T743L320oc; T743L400oc; T743L500oc; T743L630oc; T744L250oc; T744L320oc;
T744L400oc; T744L500oc; T744L630oc;
xx = EB / E / M / T / MT

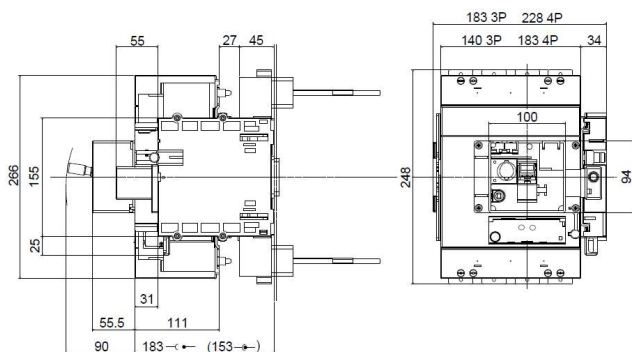
Plug-in version, with cage terminals



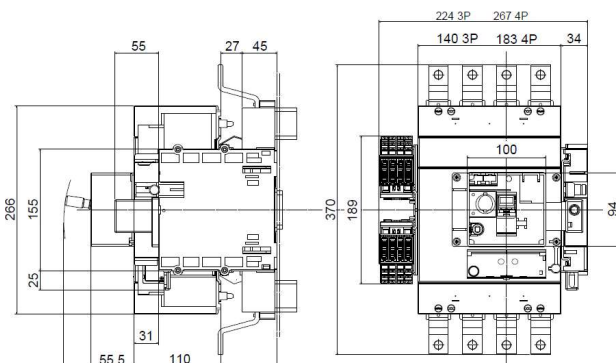
Plug-in version, without front terminals



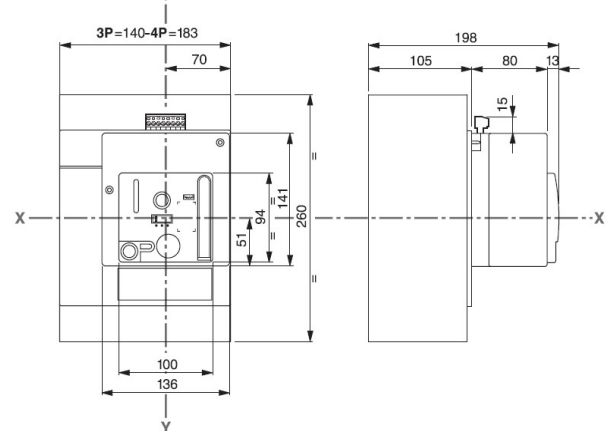
Draw-out version, flat rear terminals



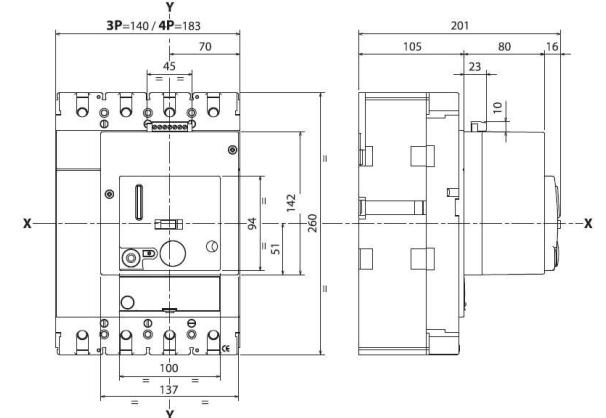
Draw-out version with sliding auxiliary contacts



Motor operator for synchronized operations (energy storage type)



Motor operator for general purpose operations (direct action type)



3.2 Weights

Configuration	Weights (Kg)			
	3P		4P	
	I _n ≤ 400A	I _n ≥ 500A	I _n ≤ 400A	I _n ≥ 500A
Circuit breaker (fixed version)	5.80	6.20	7.30	7.80
Plug-in (with front terminals) *	3.35	3.35	4.29	4.29
Plug-in (with rear terminals)*	3.55	3.55	4.79	4.79
Draw-out *	2.3	2.3	5.5	5.5

** to add to fixed version*

* to add to fixed version

4. OVERVIEW

4.1 Supplied with:

- fixing screws (4 for 3P and 4P)
- screws for connections (6 for 3P and 8 for 4P)
- phase insulators (2 for 3P and 3 for 4P)

5. ELECTRICAL CONNECTIONS

5.1 Mounting possibilities

On plate:

- Vertical
- Horizontal
- Supply inverter type

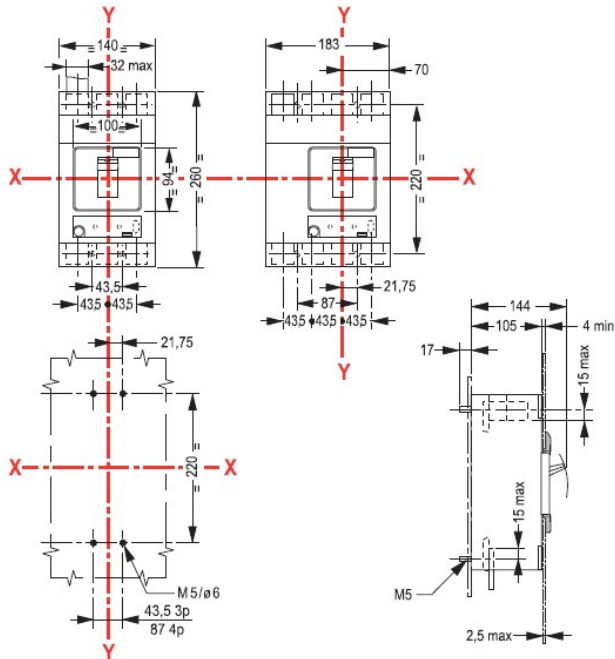
Megatiker M4 630 electronic circuit breakers

Reference(s) :

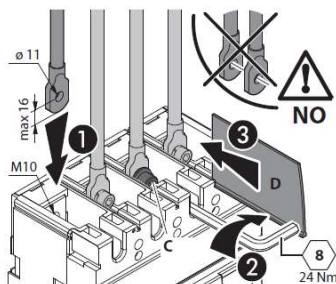
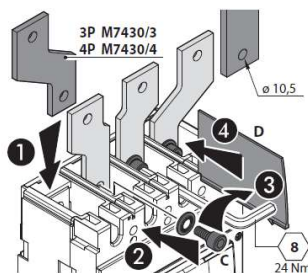
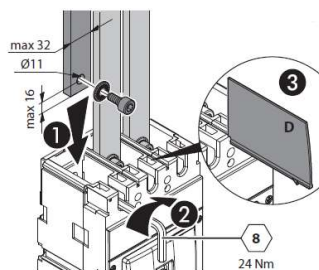
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T744L400xx;T744L500xx;T744L630xx;
xx = EB / E / M / T / MT

5.2 Mounting

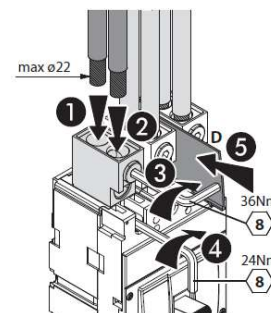
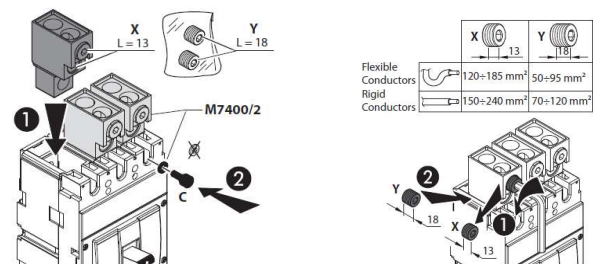
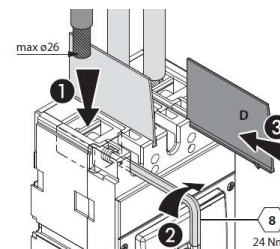
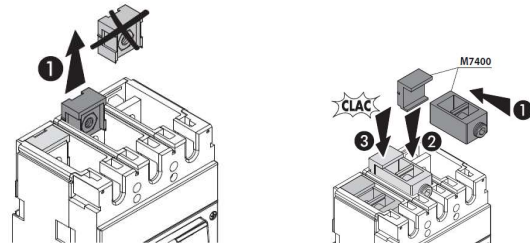
(see instruction sheet for detailed mounting procedures)



Busbars/cable lugs:



Cables:



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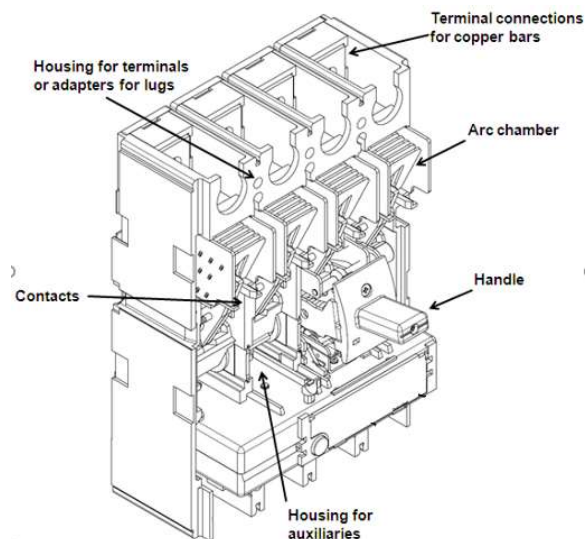
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6. ELECTRICAL AND MECHANICAL CHARACTERISTICS

Circuit breaker

Circuit Breaker	M4 630 F/N/H/L (38kA, 50kA, 70kA, 100kA)
Rated current (A)	250, 320, 400, 500, 630
Poles	3 - 4
Pole pitch (mm)	42
Rated insulation voltage (50/60Hz) U_i (V)	800
Rated operating voltage (50/60Hz) U_o (V)	690
Rated impulse withstand current I_{imp}	8
Rated frequency (Hz)	50 - 60
Operating temperature (°C)	-25 + 70
Mechanical endurance (cycles)	20000
Mechanical endurance with motor control	10000
Electrical endurance at I_n (cycles)	4000
Electrical endurance at 0.5 I_n (cycles)	8000
Utilization category	B ($I_n \leq 400A$); A ($I_n \geq 500A$)
Suitable for isolation	Yes
Type of protection	Electronic
Electronic trip S1	Yes
Electronic trip S2	Yes
Electronic trip Sg	Yes
Thermal adjustment I_t	$(0.4 \div 1) \times I_n$
Magnetic adjustment I_{ad} (A)	$(1.5 \div 10) \times I_n$
Neutral protection for 4P (% I_n of phase pole)	0 - 50 - 100 - 150 - 200
Dimensions (W x H x D) (mm)	140 x 260 x 105 (3P) 183 x 260 x 105 (4P)
Maximum weight for fixed version (kg)	6.20 (3P) 7.80 (4P)

6.1 Main parts constituting the circuit breaker



6.2 Breaking capacity (kA)

		Breaking capacity (kA) & I_{cs}			
		3P-4P			
IEC 60947-2	U_e/I_{cu} (I_{cu} letter)	36kA (F)	50kA (N)	70kA (H)	100kA (L)
	220/240 V AC	70	100	105	150
	380/415 V AC	36	50	70	100
	440/460 V AC	30	40	60	70
	480/500 V AC	25	30	40	50
	480/550 V AC	20	22	25	28
	600 V AC	20	22	25	28
	690V AC	14	18	20	22
	I_{cs} (% I_{cu})	100	100	100	70
	Rated making capacity under short circuit I_{cm}				
NEMA AB-1	I_{cm} (kA) at 415V	76.5	105	154	220
	220/240 V AC	70	100	105	150
	480/500 V AC	25	30	40	50
	690 V AC	14	18	20	22

6.3 Rated current (I_n) at 40°C / 50°C

I_n (A)	Phases limit trip current			
	thermal (I_r)		magnetic (I_i)	
	$0.4 \times I_n$	$1 \times I_n$	$1.5 \times I_r$	$10 \times I_r$
250	100	250	375	2500
320	128	320	480	3200
400	160	400	600	4000
500	200	500	750	5000
630	252	630	945	6300

* For neutral adjustment, as explained in technical sheet, please consider the values ratios 100% on set currents.

6.3 Load operations

Force on handle	$I_n \leq 400A$	$I_n \geq 500A$
Opening operation (N)	80	130
Closing operation (N)	180	210
Restore operation (N)	145	200

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6.4 Electrodynamic forces

The table below shows an indication of suggested distances to keep between the breaker and the first fixing point of the conductor and bars in order to reduce the effects of the electrodynamic stresses that may be created during a short circuit. In the realization of anchorage system it is recommend the use of isolators suitable for the type of conductor used and the operating voltage.

I _{cc} (kA)	Maximum Distance (mm)
36	350
50	300
70	250
100	200

According to conductor type and bar system (except Legrand bar kits), the choice of the distance to keep is to be calibrated by the installer. Also installer must take into account the weight of the conductors so that this does not affect the electrical junction between the conductor itself and the connection point.

6.5 Power losses per pole under I_n

	Power losses per pole (W)									
	I _n (A)									
	250		320		400		500		630	
	Phase	Neutral	Phase	Neutral	Phase	Neutral	Phase	Neutral	Phase	Neutral
Cage terminals	7.5	7.5	12.3	12.3	19.2	19.2	22.1	22.1	35.0	35.0
Lugs	7.5	7.5	12.3	12.3	19.2	19.2	22.1	22.1	35.0	35.0
External lugs	8.2	8.2	13.5	13.5	21.1	21.1	25.1	25.1	39.8	39.8
Spreaders	9.0	9.0	14.7	14.7	22.9	22.9	26.7	26.7	42.3	42.3
Rear terminals	8.7	8.7	14.2	14.2	22.3	22.3	26.9	26.9	42.7	42.7
Plugin version	15.0	15.0	24.7	24.7	38.5	38.5	52.3	52.3	83.0	83.0
Circuit breaker + RCD	10.6	10.6	17.4	17.4	27.2	27.2	34.6	34.6	54.9	54.9

Note: power loss in the table above are referred and measured as described in the standard IEC 60947-2 (Annex G) for circuit-breakers. Values in the table are referred to a single phase.

6.6 DERATINGS

6.6.1 Temperature

Rated current and his adjustment has to be considered relating to a rise or fall of ambient temperature and to a different version or installation conditions. The table below indicates the maximum long-time (LT) protection setting depending on the ambient temperature.

I _n (A)	Temperature Ta (°C)		
	up to 50	60	70
250	250	250	250
320	320	320	320
400	400	360	340
500	500	500	500
630	630	567	536

For derating temperature with other configurations, see table A.

6.6.2 Specific condition use

Climatic conditions

according to IEC/EN 60947-1 Annex Q, Cat. F subject to temperature, humidity, vibration, shock and salt mist.

Electromagnetic disturbances (EMC)

for M4 630 circuit breakers, according to IEC/EN 60947-2 Annex F

Pollution degree

for M4 630 circuit breakers, degree 3, according to IEC/EN 60947-2

6.6.3 Altitude

Altitude derating for M4

Altitude (m)	2000	3000	4000	5000
U _e (V)	690	590	520	460
I _n (A) (T _a = 40°C/50°C)	1 x I _n	0.98 x I _n	0.93 x I _n	0.9 x I _n

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7. CONFORMITY

M4 range of product concerning circuit-breakers and switch-disconnectors exceed compliance with the IEC/EN standard 60947-2 and 60947-3 respectively. Certification available by IECEE CB-scheme or LOVAG Compliance scheme.

Marks as CCC (China), EAC (Eurasian Federation) or different local certification are available.

M4 are in conformity with the Lloyds Shipping Register, RINA and Bureau Veritas Marine.

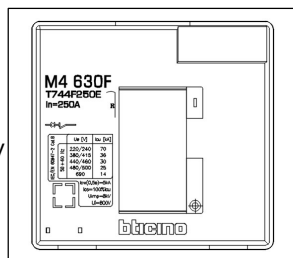
For specific information, please contact Legrand support.

7.1 Marking

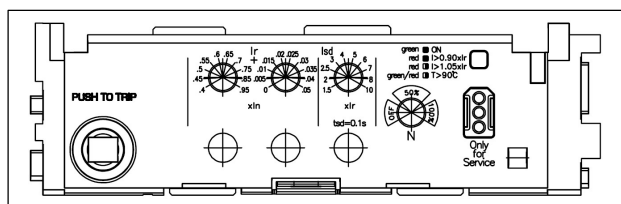
Product (both circuit breakers and switch disconnectors) are provided with labelling in full conformity to the referred standard and directives requirements by laser or sticker labels as:

Product laser label on front

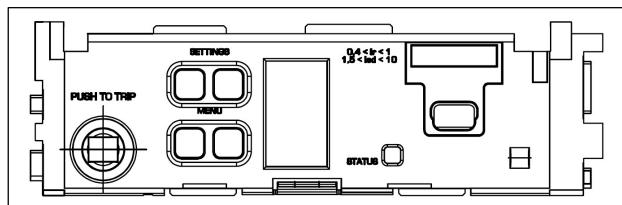
- Manufacturer responsible
- Denomination, type product, code
- Standard conformity
- Standard characteristics declared
- coloured identification of I_{cu} at 415V



Knobs version (S1 type)



Display version (S2/Sg type)



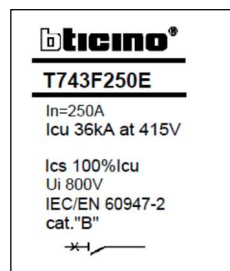
Product sticker label on side

- Manufacturer responsible
- Denomination and type product
- Standard conformity
- Mark/Licence (if any)
- Directive requirements
- bar code identification product
- Manufacturing Country



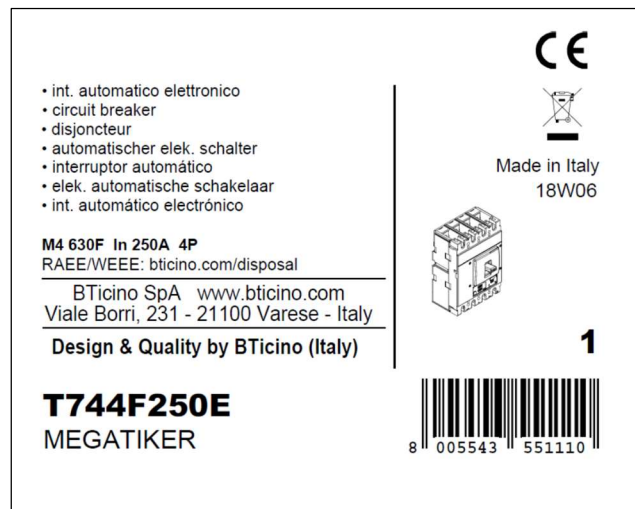
Mark sticker label on side

- Product code
- Mark/Licence (if any)
- Country deviation, if any



Packaging sticker label

- Manufacturer responsible
- Denomination and type product
- Standard conformity
- Mark/Licence (if any)
- Directive requirements
- bar code identification product



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T743H250xx; T743H320xx; T743H400xx; T743H500xx; T743H630xx; T744H250xx; T744H320xx; T744H400xx; T744H500xx; T744H630xx; T743L250xx; T743L320xx; T743L400xx; T743L500xx; T743L630xx; T744L250xx; T744L320xx; T744L400xx; T744L500xx; T744L630xx;
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8. EQUIPMENTS AND ACCESSORIES

8.1 Earth leakage modules

Earth leakage characteristics for M4 630		
	Standard	with Led
Type	A - S	A - S
Uninterrupted nominal current I_u (A)	up to 630	up to 630
Rated isolated voltage U_i (V AC)	500	500
Rated operating voltage U_e (V AC) (50-60Hz)	500	500
Operating voltage (V AC) (50-60Hz)	230 ÷ 500	110 ÷ 500
Nominal frequency (Hz)	50 - 60	50 - 60
Operating temperature (°C)	-25 ÷ 70	-25 ÷ 70
Trip	electronic	electronic
Earth leakage time adjustments (s)	0 - 0.3 - 1 - 3	0 - 0.3 - 1 - 3
Earth leakage breaking capacity I_{dm} (% I_{cu})	60	60
Earth leakage protection adjustments $I_{\Delta n}$ (A)	0.03 ÷ 3	0.03 ÷ 3
Side-by-side mounting	no	no
Underneath mounting	yes	yes
50% Earth fault detection contact $I_{\Delta n}$	no	yes
Clip on rail DIN 35	no	no
Dimensions (W x H x D) (mm) for 4P	183 x 152 x 105	183 x 152 x 106

(Power losses, see par. 5.4)

Standard

I_n = 400A 4P

ref. T7082/400

I_n = 630A 4P

ref. T7092/630

LED version

400A 4P

ref. T7081/400

630A 4P

ref. T7091/630

8.2 Releases (for M4 630 / M5 1600)

- shunt releases with voltage:

24 Vac and dc

ref. M7C024

48 Vac and dc

ref. M7C048

110÷130 Vac and dc

ref. M7C110

220÷250 Vac and dc

ref. M7C230

380÷440 Vac and dc

ref. M7C400

Shunt releases electrical characteristics	
Rated voltage (U_c)	Both ac and dc: 24V/48V/110÷130V/220÷250V/380÷440V
Voltage range (% U_c)	70 ÷ 110
Intervention time (ms)	≤ 50
Power consumption (W/VA)	300
Minimum opening time (ms)	50 ms
Insulation voltage (kV)	2,5

- undervoltage releases with voltage:

24 V dc

ref. M7T024C

24 V ac

ref. M7T024

48 V dc

ref. M7T048C

110 - 125 V ac

ref. M7T110

220 - 240 V ac

ref. M7T230

380 - 415 V ac

ref. M7T400

Undervoltage relays electrical characteristics	
Rated voltage (U_c)	ac: 24V/110÷125V/220÷240V/380÷415V dc: 24V/48V
Voltage range (% U_c)	85 ÷ 110
Minimum opening time (ms)	50
Power consumption (W/VA)	1.6 / 5

- time-lag undervoltage releases (800 ms)

Time-lag modules with voltage:

24 V dc

ref. M7000MR/024

230 V ac

ref. M7000MR/230

400 V ac

ref. M7000MR/400

Universal Release

ref. M7TMEV

(to be equipped with a time-lag module 0 261 90/91)

8.3 Auxiliary contacts (for M4 630 / M5 1600)

Changeover switch 3A – 250 VAC

ref. M7X01

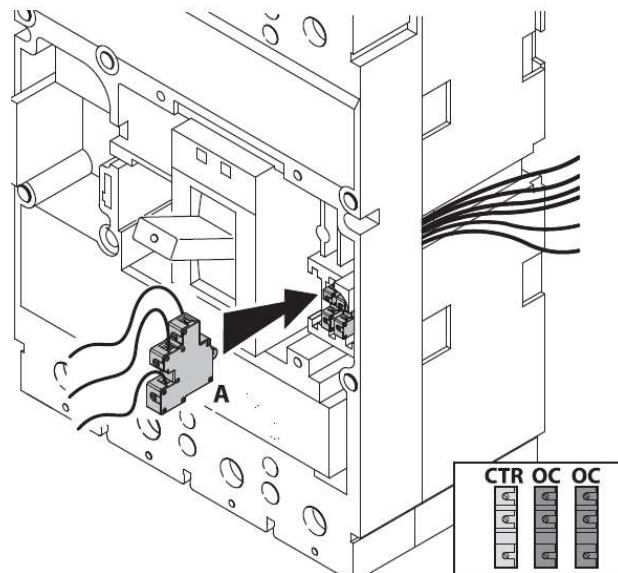
To show the state of the contacts or opening of the M4 on a fault:

- Auxiliary contact (standard) OC
- Fault signal CTR

Auxiliary contact electrical characteristics		
Rated voltage (V_n)	V (ac or dc)	24 to 250
Intensity (A)	24 V dc	5
	48 V dc	1.7
	110 V dc	0.5
	230 V dc	0.25
	110 V ac	4
	230/250 V ac	3

Configurations:

M4 630 → 2 auxiliary contacts + 1 fault signal + 1 release



To get more information on auxiliary mounting procedures, please refer to product instruction sheet.

Megatiker M4 630

electronic circuit breakers

Reference(s) :

T743F250xx;T743F320xx;T743F400xx;T743F500xx;T743F630xx;T744F250xx;44F320xx;T744F400xx;T744F500xx;
T744F630xx;T743N250xx;T743N320xx;T743N400xx;T743N500xx;T743N630xx;T744N250xx;T744N320xx;
T744N400xx;T744N500xx;T744N630xx;
T743H250xx;T743H320xx;T743H400xx;T743H500xx;T743H630xx;T744H250xx;44H320xx;T744H400xx;T744H500xx;
T744H630xx;T743L250xx;T743L320xx;T743L400xx;T743L500xx;T743L630xx;T744L250xx;T744L320xx;
T744L400xx;T744L500xx;T744L630xx;
xx = EB / E / M / T / MT

8.4 Rotary handles

Direct on M4

- Standard (black) *ref. M7447*
- For emergency use (red / yellow) adapting on standard handle *ref. M7R14*

Vari-depth handle IP55

- Standard (black) *ref. M7449*
- For emergency use (red / yellow) adapting on standard handle *ref. M7449E*

Locking accessories

- Key barrel (direct rotary handle) *ref. M7163*
- Key barrel and flat key (vari-depth handle) *ref. M7R15*
- Key barrel and star key (vari-depth handle) *ref. M7R16*
- Key barrel and flat key (cod. EL43525)(vari-depth handle) *ref. M7R15A*

8.5 Motor operators (front operated)

For general purpose operations (direct action type):

- 230 V ac *ref. M74D230*

For synchronized operations (energy storage type):

- 24 V ac and dc *ref. M7475P/024*
- 48 V ac and dc *ref. M7475P/048*
- 110 V ac *ref. M7475P/110*
- 230 V ac *ref. M7475P/230*

	M74D230		M7475P/xx	
Type	Direct drive		Energy storage	
Rated operating voltage (U _n) - AC	230V AC 50-60Hz		24 - 48 - 230	
Rated operating voltage (U _n) - DC	230V AC 50-60Hz		24 - 48 - 230	
Voltage range (%U _n)	85-110		85-110	
	Opening	Closing	Opening	Closing
Pick-up consumption (W/VA)	240	300	300	300
Hold consumption (W/A)	80	120	300	300
Operating time / complete electric operation (ms)	450	550	2000	100
Operating time / main contacts change position (ms)	270	550	n/a	n/a
Mechanical endurance (O-Cycles) @I _n =630A	10000		n/a	
Electrical endurance (O-Cycles) @I _n =630A	4000		4000	
Cycles / minutes	up to 8 automatic open/close operations in a row		10	4

Locking accessories:

- Lock and star key (cod. HBA90GPS6149) *ref. M7M415*
- Lock and flat key (cod. ABA90GEL6149) *ref. M7M405*

8.6 Mechanical accessories

- Padlock (for locking in "OPEN" position) *ref. M7045*
- Insulated shields (phase insulators) *ref. M7295*
- Sealable terminal shields:
 - Set of 2 (for 3P) *ref. M7475*
 - Set of 3 (for 4P) *ref. M7490*
- Terminal covers to guarantee IP20:
 - Set of 2 (for 3P) *ref. M7C11*
 - Set of 3 (for 4P) *ref. M7C12*

8.7 Connection accessories

Cage terminals

- Set of 4 terminals for cables 300 mm² max (rigid) *ref. M7400*
- or 240 mm² max (flexible) Cu/Al

- Set of 4 high-capacity terminals for cables 2x240 mm² max (rigid) or 2x185 mm² max (flexible) Cu/Al *ref. M7400/2*

Extended front terminals

- Set of 4 *ref. M7430*

Spreaders (incoming or outgoing):

- Set of 2 (for 3P) *ref. M7430/3*
- Set of 3 (for 4P) *ref. M7430/4*

Rear terminals (incoming or outgoing):

(used to convert the fixed version with front terminals into the fixed version with rear terminals)

- for 3P *ref. M7450/P*
- for 4P *ref. M7451/P*

8.8 Plug-in version

(A plug-in is a M4 fitted with special terminals and mounted on a plug-in base)

Special terminals for plug-in / draw-out base
(for incoming and outgoing terminals)

- Set of 6 terminals (3P) *ref. M7B11*
- Set of 8 terminals (4P) *ref. M7B12*

Bases

(accept DPX³/DPX³-I fitted with special terminals)

- Front terminal mounting base for 3P *ref. M7B13*
- Front terminal mounting base for 4P *ref. M7B14*
- Flat rear terminal mounting base for 3P *ref. M7B15*
- Flat rear terminal mounting base for 4P *ref. M7B16*

Bases for breakers with mounted earth leakage module

- Front terminal mounting base for 4P *ref. M7B17*
- Flat rear terminal mounting base for 4P *ref. M7B18*

Accessories

- Set of 2 extractor handle *ref. M7B19*
- Set of connectors (24-pin) *ref. M7B20*

Megatiker M4 630

electronic circuit breakers

Reference(s) :

T743F250xx; T743F320xx; T743F400xx; T743F500xx; T743F630xx; T744F250xx; 44F320xx; T744F400xx; T744F500xx; T744F630xx; T743N250xx; T743N320xx; T743N400xx; T743N500xx; T743N630xx; T744N250xx; T744N320xx; T744N400xx; T744N500xx; T744N630xx;
T743H250xx; T743H320xx; T743H400xx; T743H500xx; T743H630xx; T744H250xx; 44H320xx; T744H400xx; T744H500xx; T744H630xx; T743L250xx; T743L320xx; T743L400xx; T743L500xx; T743L630xx; T744L250xx; T744L320xx; T744L400xx; T744L500xx; T744L630xx;
xx = EB / E / M / T / MT

8.9 Draw-out version

(An M4 draw-out version is a plug-in M4 fitted with a "Debro-lift" mechanism which can be used to withdraw the M4 while keeping it on its base)

"Debro-lift" mechanism

(supplied with a rigid slide and handle for drawing-out)

- For base only (3P) *ref. M7B22*
- For base only (4P) *ref. M7B23*
- For base with earth leakage module (4P) *ref. M7B24*

Keylock for "Debro-lift" mechanism

(enable locking in draw - out position)

Flat key n°HBA90GPS6149

Star key n°ABA90GEL6149

- One key for breaker only (flat key) *ref. M7B34*
- One key for breaker only (star key) *ref. M7B33*
- One key for motorized breaker or with rotary handle (flat key) *ref. MT7959R*
- One key for motorized breaker or with rotary handle (star key) *ref. MT7959*

Accessories for "Debro-lift" mechanism

- Signalling contact (plugged-in / draw-out) *ref. MT7910N*
- Handle for drawing - out *ref. T7475PC*

Auxiliary contacts

- Automatic auxiliary contacts for draw-out version (up to 2 contacts by M4) *ref. M7B21*

Plate for transfer switches (factory assembled)

(A transfer switch plate is composed of one plate with interlock for 2 devices)

- Plate for breaker or trip-free switch fixed version *ref. M7197N*
- Plate for breaker or trip-free switch plug-in and draw-out version *ref. M7197N/01*

8.10 Specific accessories for electronic version

Auxiliary power supply

- For supplying electronic units *ref. M7ALIM*

Is used to supply DPX³ electronic circuit breakers S2/Sg with / without earth leakage module and with / without energy metering central unit.

It is mandatory in case of electronic breakers with integrated measure and not interconnected in a supervision system (MODBUS network not requested) to correctly manage the measure functions

Technical characteristics:

- Input voltage: 24V ad/dc (+/- 10%)
- Enclosure: 2 DIN modules
- Output: up to 250mA (to supply many circuit breakers according to the following table):

M7ALIM	M2 / M4 / M5	[mA]
I _{out} MAX = 250 mA	Electronic (S2/Sg)	50
	Electronic with power metering (S2/Sg)	62.5
	Electronic with residual current protection (S2)	50
	Electronic with residual current protection and power metering (S2)	62.5

According to single absorptions, it can be possible to connect more than one breaker

MODBUS communication

- RS485 MODBUS communication interface *ref. M7COM*

Is used for sharing on MODBUS network all information managed by DPX³ electronic circuit breakers S2/Sg with / without earth leakage module and with / without energy metering central unit.

Technical characteristics:

- USB local PC connection
- Input voltage: 24V ad/dc (+/- 10%)
- Enclosure: 1 DIN modules
- MODBUS address configuration / transmission mode / transmission speed by physic configurators
- Output relay (220V – 0,2A): to signal tripped position

Consumption: 90mA

It is possible to connect only one breaker to the interface.

In case of use of MODBUS interface M7COM, the external power supply module M7ALIM is not necessary because the external power is already provided by the MODBUS module

Web server

- For remote viewing of values collected on electricity meters and multi-function measuring units
 - 32 metering points *ref. PM1WS*
 - Unlimited metering points *ref. PM1WS1*

Software

- To display values collected on electricity meters and multi-function measuring units on a PC connected to the network
 - 32 metering points *ref. PM1SW*
 - Unlimited metering points *ref. PM1SW1*

Touch screen

- To show data collected by all circuit breakers. It can manage up to 8 devices *ref. PM1TS*

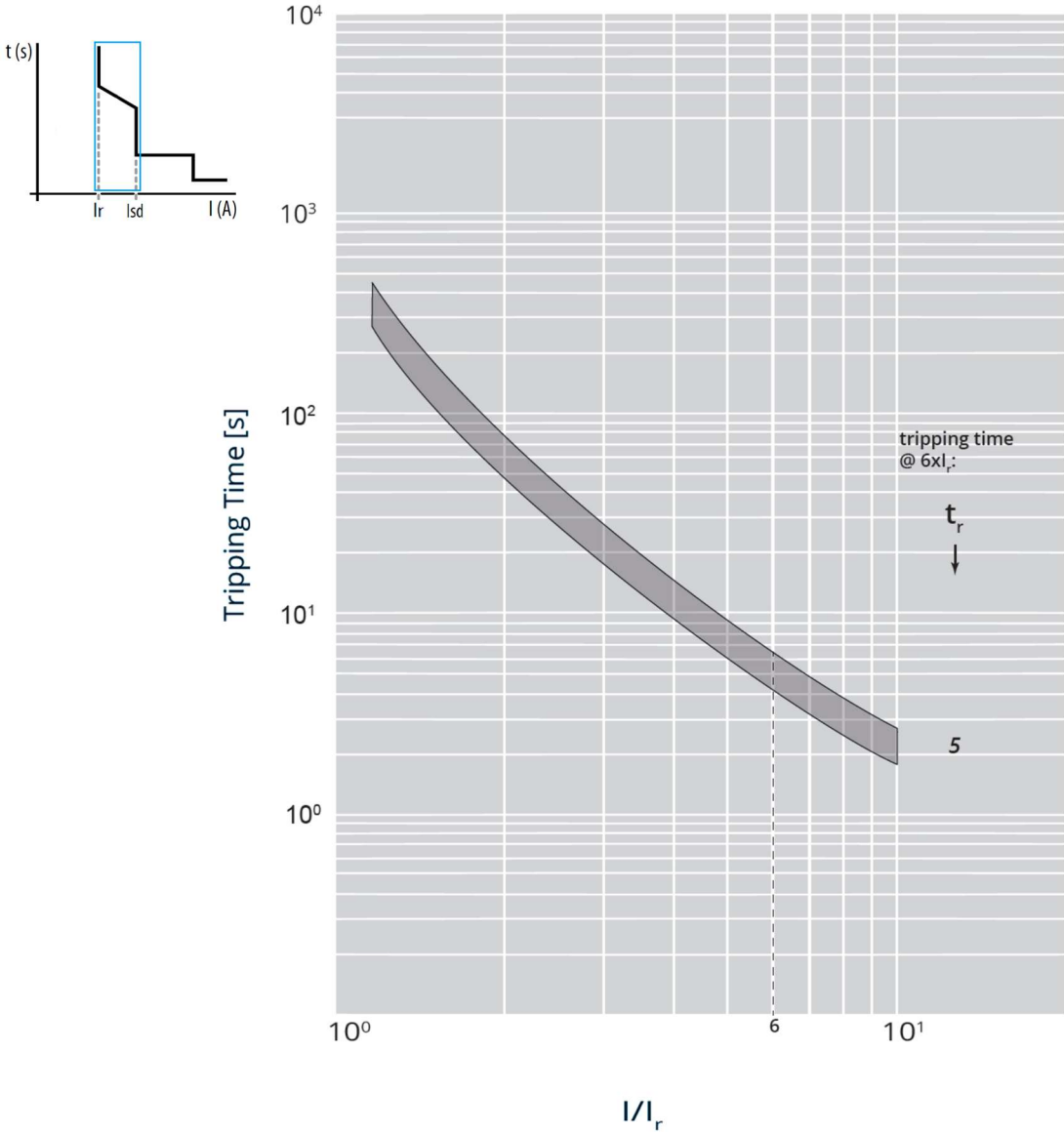
Megatiker M4 630
electronic circuit breakers

Reference(s) :
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T744N400xx;T744N500xx;T744N630xx;
T743H250xx;T743H320xx;T743H400xx;T743H500xx;T743H630xx;T744H250xx;44H320xx;T744H400xx;T744H500x
x;T744H630xx;T743L250xx;T743L320xx;T743L400xx;T743L500xx;T743L630xx;T744L250xx;T744L320xx;
T744L400xx;T744L500xx;T744L630xx;
xx = EB / E / M / T / MT

9. CURVES

9.1.1 Tripping curve (for S1 version) [1/3]

Update: 02/07/2018



I_{cu} = 36-50-70-100 kA I_{max} = 630A 3-4 P U_e = 415Vac (IEC/EN 60947-2)

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
I ² t = K	constant pass-through energy setting
t = K	constant tripping time setting
—————	long time trip curve
-----	short time trip curve
Current tolerance	10% up to I _{sd} ; 20% up to I _i

Megatiker M4 630 electronic circuit breakers

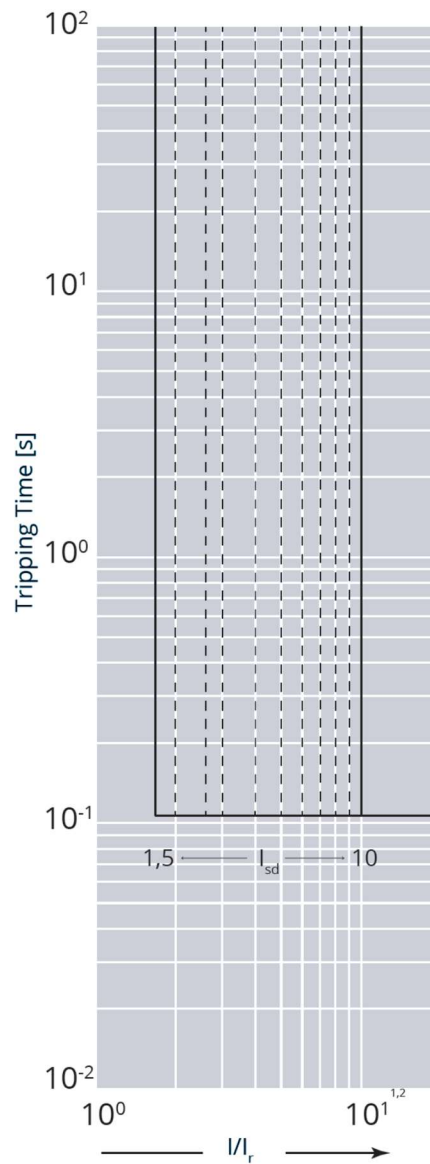
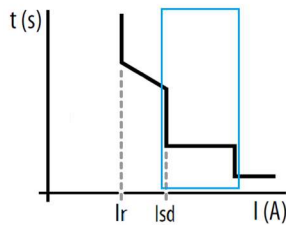
Reference(s) :

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T743H250xx;T743H320xx;T743H400xx;T743H500xx;T743H630xx;T744H250xx;44H320xx;T744H400xx;T744H500x
x;T744H630xx;T743L250xx;T743L320xx;T743L400xx;T743L500xx;T743L630xx;T744L250xx;T744L320xx;
T744L400xx;T744L500xx;T744L630xx;
xx = EB / E / M / T / MT

9.1.2 Tripping curve (for S1 version)

[2/3]

Update: 03/12/2018



$I_{cu} = 36-50-70-100 \text{ kA}$ $I_{max} = 630\text{A}$ 3-4 P $U_e = 415\text{Vac}$ (IEC/EN 60947-2)

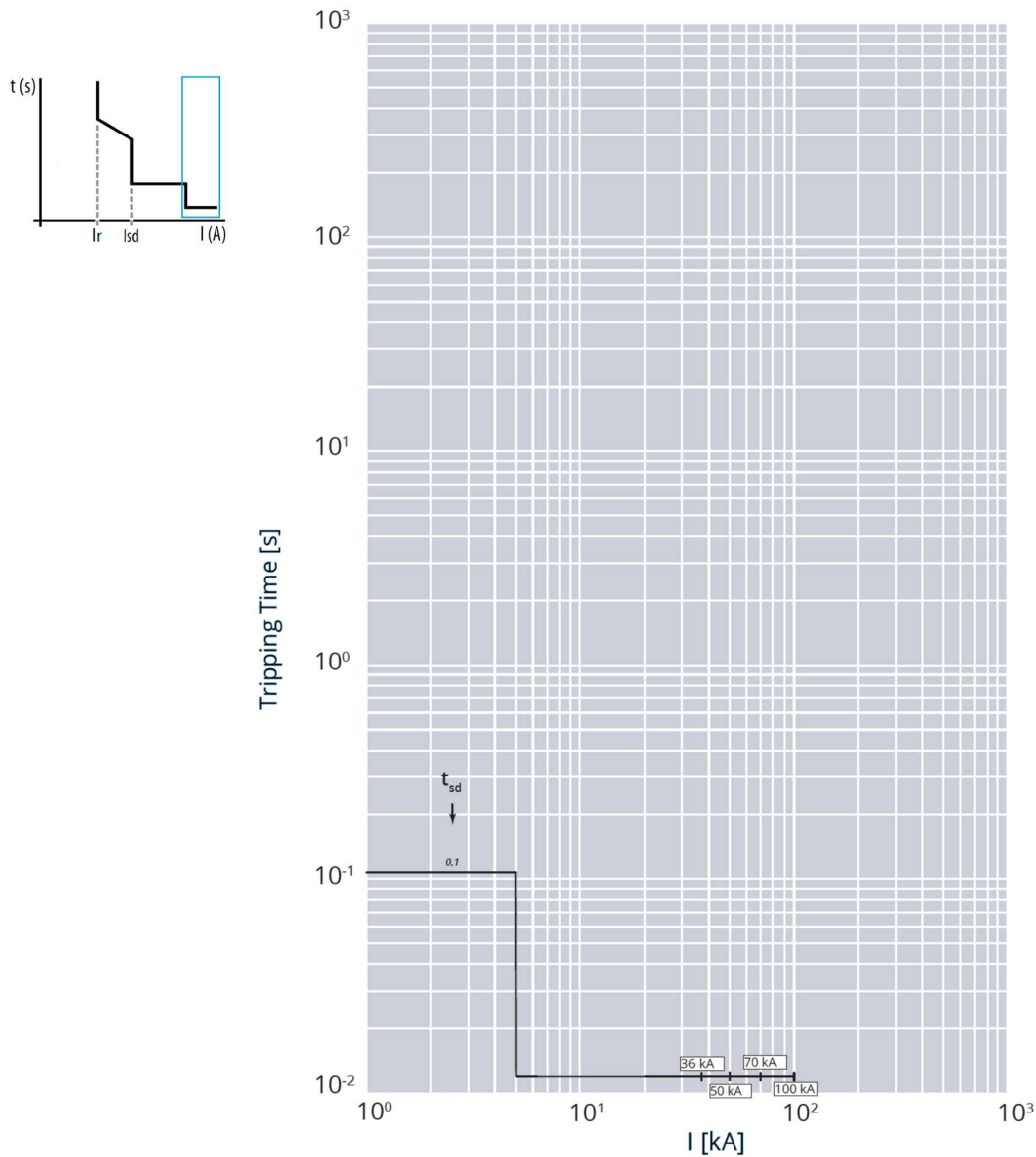
Value	Description
t	time
I	current
I_r	long time setting current
t_r	long time delay
I_{sd}	short time setting current
t_{sd}	short time delay
I_i	instantaneous release
I_{cu}	rated ultimate short-circuit breaking capacity
$I^2t = K$	constant pass-through energy setting
$t = K$	constant tripping time setting
-----	long time trip curve
-----	short time trip curve
Current tolerance	10% up to I_{sd} ; 20% up to I_i

Megatiker M4 630
electronic circuit breakers

Reference(s) :
T743F250xx;T743F320xx;T743F400xx;T743F500xx;T743F630xx;T744F250xx;44F320xx;T744F400xx;T744F500xx;
T744F630xx;T743N250xx;T743N320xx;T743N400xx;T743N500xx;T743N630xx;T744N250xx;T744N320xx;
T744N400xx;T744N500xx;T744N630xx;
T743H250xx;T743H320xx;T743H400xx;T743H500xx;T743H630xx;T744H250xx;44H320xx;T744H400xx;T744H500x
x;T744H630xx;T743L250xx;T743L320xx;T743L400xx;T743L500xx;T743L630xx;T744L250xx;T744L320xx;
T744L400xx; T744L500xx; T744L630xx;
xx = EB / E / M / T / MT

9.1.3 Tripping curve (for S1 version) [3/3]

Update: 02/07/2018



I_{cu} = 36-50-70-100 kA I_{max} = 630A 3-4 P U_e = 415Vac (IEC/EN 60947-2)

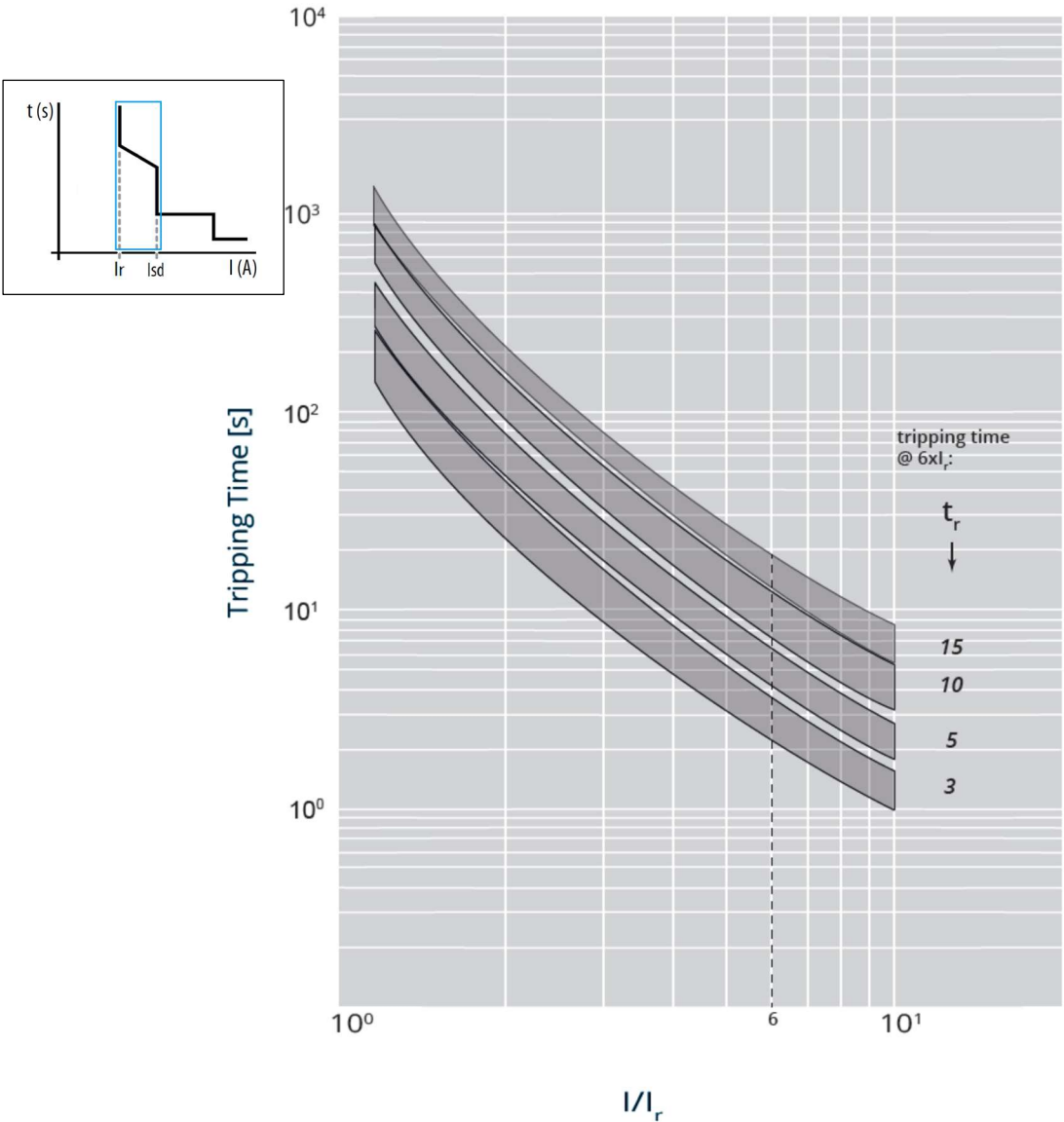
Value	Description
t	time
I	current
I _r	long time setting current
t _r	long time delay
I _{sd}	short time setting current
t _{sd}	short time delay
I _i	instantaneous release
I _{cu}	rated ultimate short-circuit breaking capacity
I ² t = K	constant pass-through energy setting
t = K	constant tripping time setting
-----	long time trip curve
-----	short time trip curve
Current tolerance	10% up to I _{sd} ; 20% up to I _i

Megatiker M4 630
electronic circuit breakers

Reference(s) :
T743F250xx;T743F320xx;T743F400xx;T743F500xx;T743F630xx;T744F250xx;44F320xx;T744F400xx;T744F500xx;
T744F630xx;T743N250xx;T743N320xx;T743N400xx;T743N500xx;T743N630xx;T744N250xx;T744N320xx;
T744N400xx;T744N500xx;T744N630xx;
T743H250xx;T743H320xx;T743H400xx;T743H500xx;T743H630xx;T744H250xx;44H320xx;T744H400xx;T744H500x
x;T744H630xx;T743L250xx;T743L320xx;T743L400xx;T743L500xx;T743L630xx;T744L250xx;T744L320xx;
T744L400xx;T744L500xx;T744L630xx;
xx = EB / E / M / T / MT

9.2.1 Tripping curve (for S2/Sg version), $t_r = 3+15\text{ s}$ [1/5]

Update: 03/12/2018



$I_{cu} = 36-50-70-100\text{ kA}$ $I_{max} = 630\text{A}$ 3-4 P $U_n = 415\text{Vac}$ (IEC/EN 60947-2)

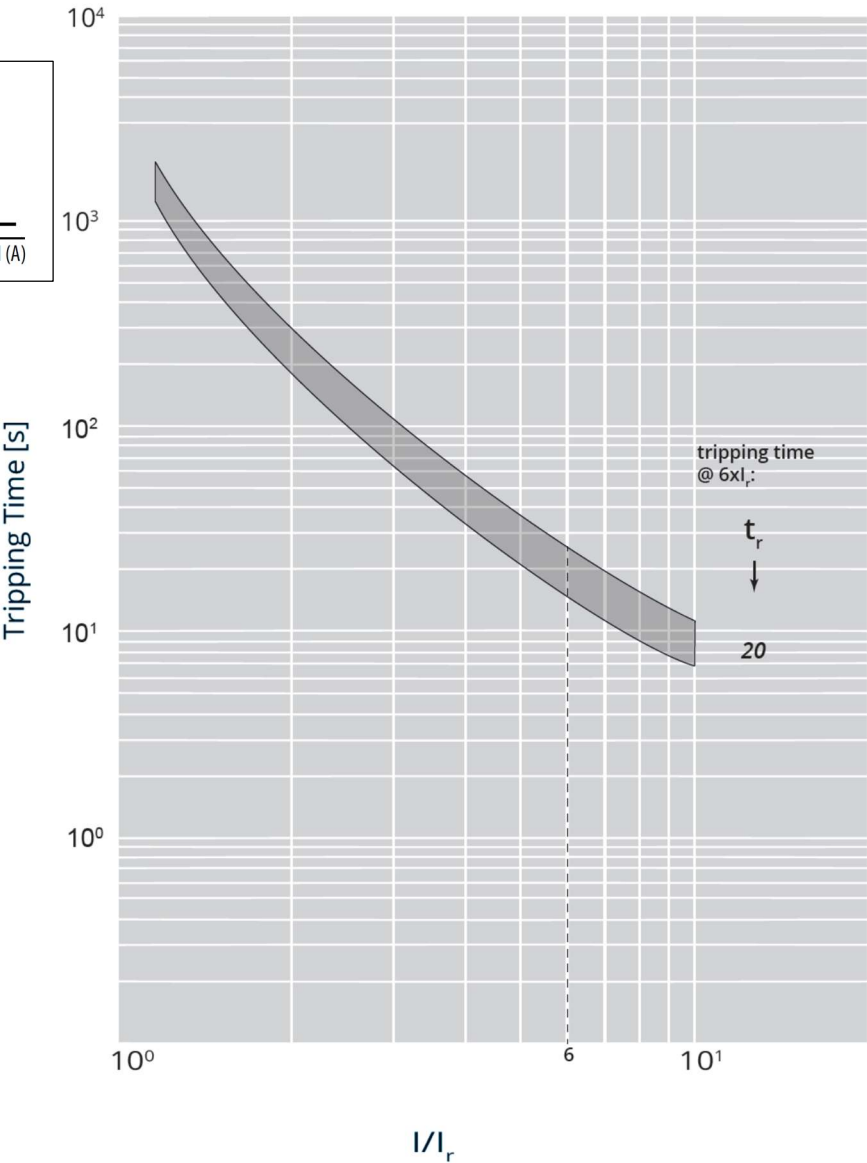
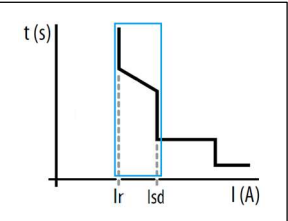
Value	Description
t	time
I	current
I_r	long time setting current
t_r	long time delay
I_{sd}	short time setting current
t_{sd}	short time delay
I_i	instantaneous release
I_{cu}	rated ultimate short-circuit breaking capacity
$I^2t = K$	constant pass-through energy setting
$t = K$	constant tripping time setting
—————	long time trip curve
-----	short time trip curve
Current tolerance	10% up to I_{sd} ; 20% up to I_i

Megatiker M4 630
electronic circuit breakers

Reference(s) :
T743F250xx;T743F320xx;T743F400xx;T743F500xx;T743F630xx;T744F250xx;44F320xx;T744F400xx;T744F500xx;
T744F630xx;T743N250xx;T743N320xx;T743N400xx;T743N500xx;T743N630xx;T744N250xx;T744N320xx;
744N400xx;T744N500xx;T744N630xx;
T743H250xx;T743H320xx;T743H400xx;T743H500xx;T743H630xx;T744H250xx;44H320xx;T744H400xx;T744H500x
x;T744H630xx;T743L250xx;T743L320xx;T743L400xx;T743L500xx;T743L630xx;T744L250xx;T744L320xx;
744L400xx;T744L500xx;T744L630xx;
xx = EB / E / M / T / MT

9.2.2 Tripping curve (for S2/Sg version), $t_r = 20$ s [2/5]

Update: 02/07/2018



$I_{cu} = 36-50-70-100$ kA $I_{max} = 630$ A 3-4 P $U_o = 415$ Vac (IEC/EN 60947-2)

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
$I^2t = K$	constant pass-through energy setting
$t = K$	constant tripping time setting
-----	long time trip curve
-----	short time trip curve
Current tolerance	10% up to I_{sd} ; 20% up to I_i

Megatiker M4 630

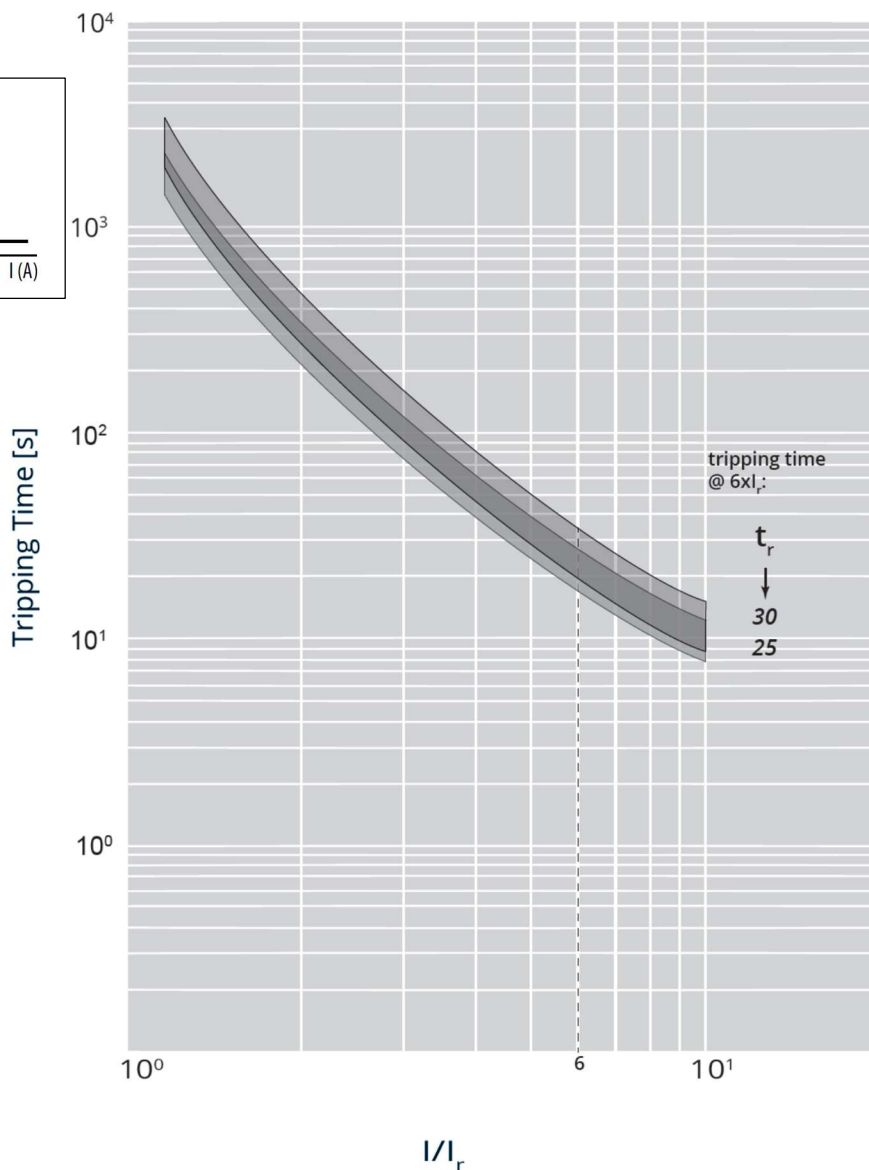
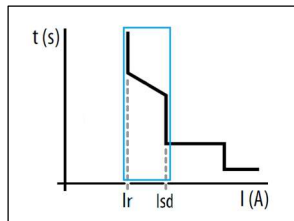
electronic circuit breakers

Reference(s) :

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x;T744H630xx;T743L250xx;T743L320xx;T743L400xx;T743L500xx;T743L630xx;T744L250xx;T744L320xx;
744L400xx;T744L500xx;T744L630xx;
xx = EB / E / M / T / MT

9.2.3 Tripping curve (for S2/Sg version), $t_r = 25+30$ s [3/5]

Update: 02/07/2018



$I_{cu} = 36-50-70-100$ kA $I_{max} = 630$ A 3-4 P $U_o = 415$ Vac (IEC/EN 60947-2)

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
$I^2t = K$	constant pass-through energy setting
$t = K$	constant tripping time setting
—	long time trip curve
-----	short time trip curve
Current tolerance	10% up to I_{sd} ; 20% up to I_i

Megatiker M4 630

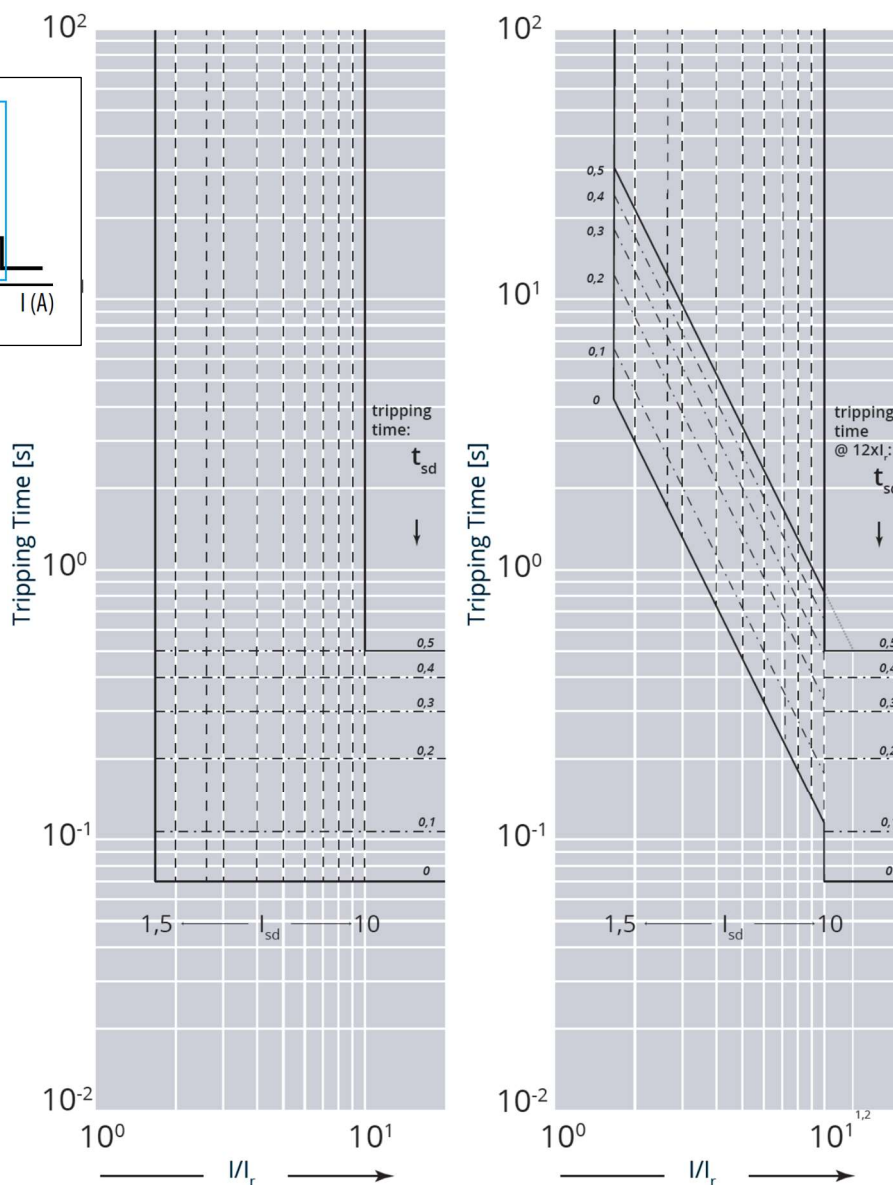
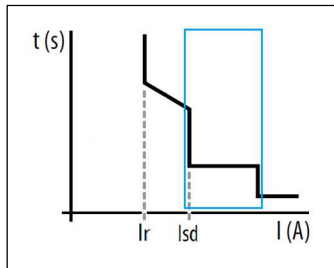
electronic circuit breakers

Reference(s) :

T743F250xx;T743F320xx;T743F400xx;T743F500xx;T743F630xx;T744F250xx;44F320xx;T744F400xx;T744F500xx;
T744F630xx;T743N250xx;T743N320xx;T743N400xx;T743N500xx;T743N630xx;T744N250xx;T744N320xx;
T744N400xx;T744N500xx;T744N630xx;
T743H250xx;T743H320xx;T743H400xx;T743H500xx;T743H630xx;T744H250xx;44H320xx;T744H400xx;T744H500x
x;T744H630xx;T743L250xx;T743L320xx;T743L400xx;T743L500xx;T743L630xx;T744L250xx;T744L320xx;
T744L400xx;T744L500xx;T744L630xx;
xx = EB / E / M / T / MT

9.2.4 Tripping curve (for S2/Sg version) [4/5]

Update:
02/07/2018



$I_{cu} = 36-50-70-100 \text{ kA}$ $I_{max} = 630A$ 3-4 P $U_n = 415Vac$ (IEC/EN 60947-2)

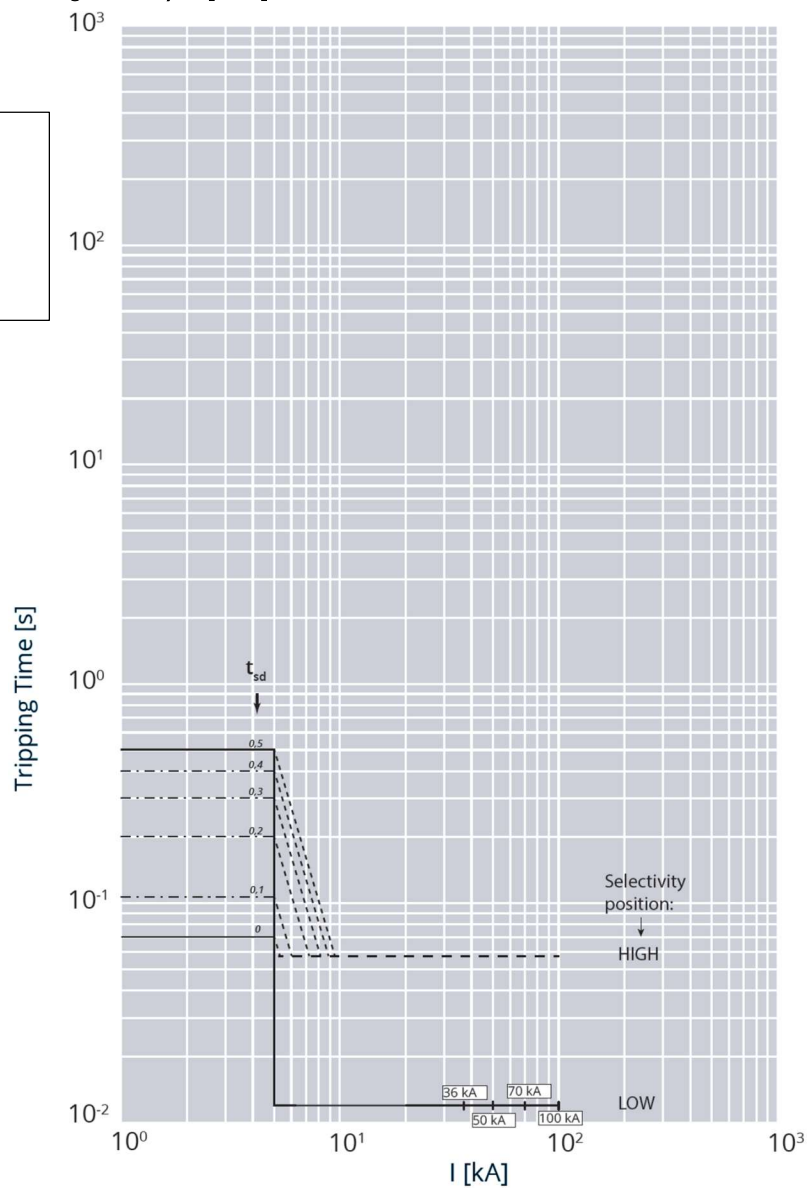
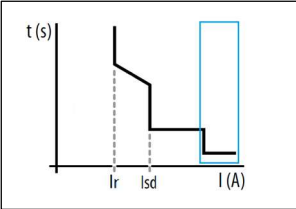
Value	Description
t	time
I	current
I_r	long time setting current
t_r	long time delay
I_{sd}	short time setting current
t_{sd}	short time delay
I_i	instantaneous release
I_{cu}	rated ultimate short-circuit breaking capacity
$I^2t = K$	constant pass-through energy setting
$t = K$	constant tripping time setting
-----	long time trip curve
-----	short time trip curve
Current tolerance	10% up to I_{sd} ; 20% up to I_i

Megatiker M4 630
electronic circuit breakers

Reference(s) :
T743F250xx;T743F320xx;T743F400xx;T743F500xx;T743F630xx;T744F250xx;44F320xx;T744F400xx;T744F500xx;
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744N400xx;T744N500xx;T744N630xx;
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x;T744H630xx;T743L250xx;T743L320xx;T743L400xx;T743L500xx;T743L630xx;T744L250xx;T744L320xx;
744L400xx;T744L500xx;T744L630xx;
xx = EB / E / M / T / MT

9.2.5 Tripping curve (for S2/Sg version) [5/5]

Update: 02/07/2018



I_{cu} = 36-50-70-100 kA I_{max} = 630A 3-4 P U_e = 415Vac (IEC/EN 60947-2)

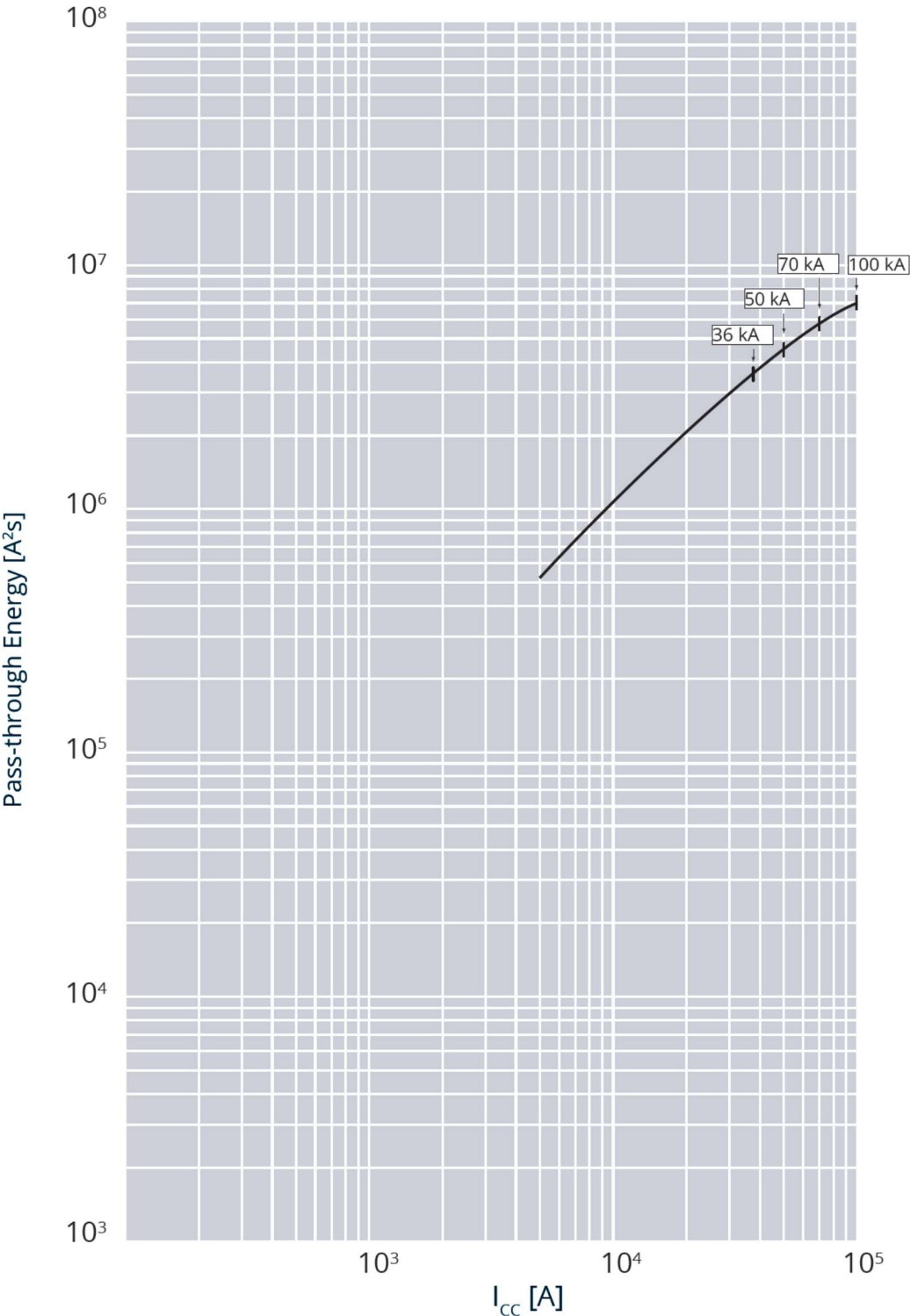
Value	Description
t	time
I	current
I _r	long time setting current
t _r	long time delay
I _{sd}	short time setting current
t _{sd}	short time delay
I _i	instantaneous release
I _{cu}	rated ultimate short-circuit breaking capacity
I ² t = K	constant pass-through energy setting
t = K	constant tripping time setting
————	long time trip curve
-----	short time trip curve
Current tolerance	10% up to I _{sd} ; 20% up to I _i

Megatiker M4 630
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Reference(s) :
T743F250xx;T743F320xx;T743F400xx;T743F500xx;T743F630xx;T744F250xx;44F320xx;T744F400xx;T744F500xx;
T744F630xx;T743N250xx;T743N320xx;T743N400xx;T743N500xx;T743N630xx;T744N250xx;T744N320xx;
744N400xx;T744N500xx;T744N630xx;
T743H250xx;T743H320xx;T743H400xx;T743H500xx;T743H630xx;T744H250xx;44H320xx;T744H400xx;T744H500x
x;T744H630xx;T743L250xx;T743L320xx;T743L400xx;T743L500xx;T743L630xx;T744L250xx;T744L320xx;
744L400xx;T744L500xx;T744L630xx;
xx = EB / E / M / T / MT

9.3 Pass-through specific energy characteristic curve

Update: 03/07/2018

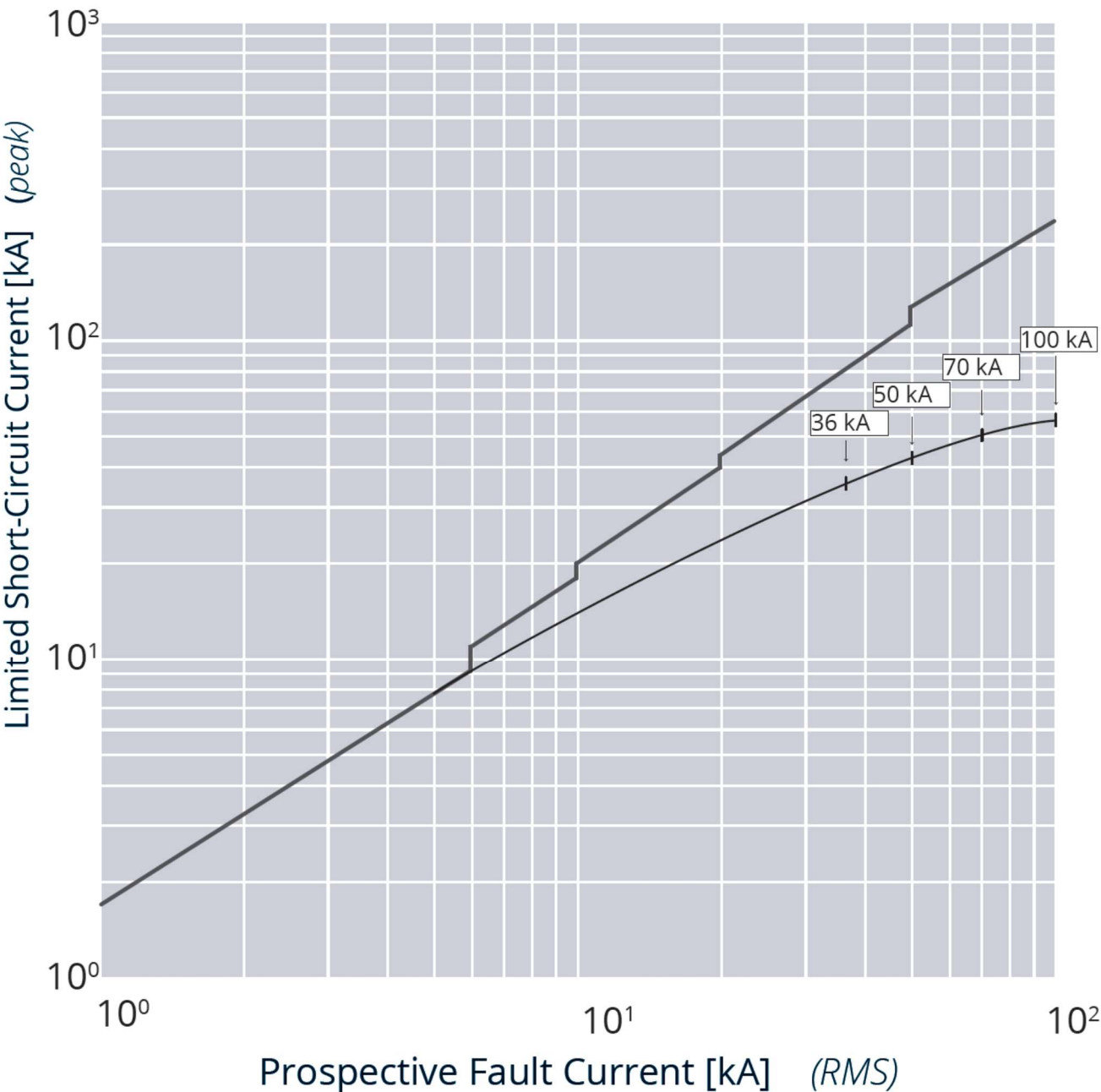


I_{cu} = 36-50-70-100 kA I_{max} = 630A 3-4 P U_o = 415Vac (IEC/EN 60947-2)

Value	Description
I _{cc}	short circuit current
I²t (A² s)	pass-through specific energy

9.4 Cut-off peak current characteristic curve (kA)

Update: 02/07/2018



I_{cu} = 36-50-70-100 kA I_{max} = 630A 3-4 P U_e = 415Vac (IEC/EN 60947-2)

Value	Description
I _{cc}	estimated short circuit symmetrical current (RMS value)
I _p	maximum short circuit peak current
	maximum prospective short circuit peak current
	corresponding at the power factor
	maximum real peak short circuit current

Megatiker M4 630

electronic circuit breakers

Reference(s) :

T743F250xx;T743F320xx;T743F400xx;T743F500xx;T743F630xx;T744F250xx;44F320xx;T744F400xx;T744F500xx;
T744F630xx;T743N250xx;T743N320xx;T743N400xx;T743N500xx;T743N630xx;T744N250xx;T744N320xx;
744N400xx;T744N500xx;T744N630xx;
T743H250xx;T743H320xx;T743H400xx;T743H500xx;T743H630xx;T744H250xx;44H320xx;T744H400xx;T744H500x
x;T744H630xx;T743L250xx;T743L320xx;T743L400xx;T743L500xx;T743L630xx;T744L250xx;T744L320xx;
744L400xx;T744L500xx;T744L630xx;

A) Derating Temperature and configurations

Fixed version		Ambient temperature									
		30 °C		40 °C		50 °C		60 °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
M4 630 fixed	Cage terminals, flexible cable	630	1	630	1	630	1	599	0.95	567	0.9
	Lugs, flexible cable	630	1	630	1	630	1	567	0.9	536	0.85
	Lugs, rigid cable	630	1	630	1	630	1	599	0.95	567	0.9
	Spreaders, flexible cable	630	1	630	1	630	1	536	0.85	504	0.8
	Rear flat staggered terminals, flexible cable	630	1	630	1	630	1	567	0.9	536	0.85
M4 630 fixed +	Cage terminals, flexible cable + RCD	630	1	630	1	536	0.85	504	0.9	473	0.75
	Lugs, flexible cable + RCD	599	0.95	599	0.95	536	0.85	504	0.8	473	0.75
	Lugs, rigid cable + RCD	630	1	599	0.95	536	0.85	504	0.8	473	0.75
	Staggered spreaders, flexible cable + RCD	630	1	630	1	536	0.85	504	0.8	473	0.75
	Rear flat staggered terminals, flexible cable + RCD	630	1	630	1	536	0.85	504	0.8	473	0.75
Draw-out version		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
M4 630 draw-out	Cage terminals, flexible cable	599	0.95	567	0.9	536	0.85	504	0.8	441	0.7
	Cage terminals, rigid cable	599	0.95	567	0.9	536	0.85	504	0.8	441	0.7
	Rear flat terminals, flexible cable	599	0.95	567	0.9	536	0.85	504	0.8	441	0.7
	Rear flat terminals, rigid cable	599	0.95	567	0.9	536	0.85	504	0.8	441	0.7
	Rear flat terminals, Cu bars, vertical	599	0.95	567	0.9	536	0.85	504	0.8	441	0.7
M4 630 draw-out + RCD	Cage terminals, flexible cable + RCD	504	0.8	441	0.7	410	0.65	378	0.6	347	0.5
	Cage terminals, rigid cable + RCD	504	0.8	441	0.7	410	0.65	378	0.6	347	0.5
	Rear flat terminals, flexible cable + RCD	504	0.8	441	0.7	410	0.65	378	0.6	347	0.5
	Rear flat terminals, rigid cable	504	0.8	441	0.7	410	0.65	378	0.6	347	0.5
	Rear flat terminals, Cu bars, vertical + RCD	504	0.8	441	0.7	410	0.65	378	0.6	347	0.5

For further technical information, please contact Bticino technical support.