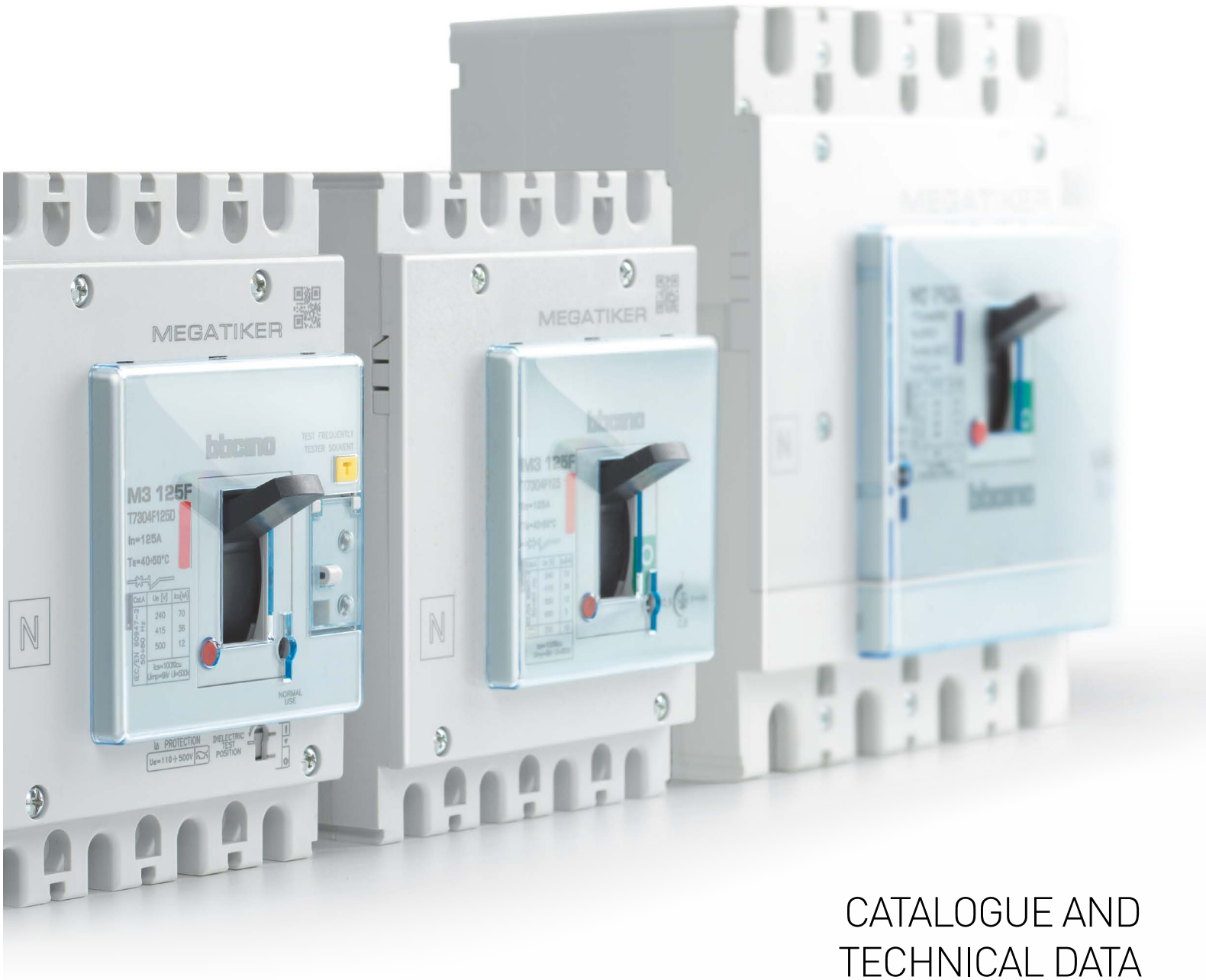
MEGATIKER

PRECISION, PROTECTION AND MEASUREMENT **UP TO 1600 A**



CATALOGUE AND TECHNICAL DATA

bticino

Wide range, high performance and safety

New functions easy to use

Safe, simple and fast installation

Catalogue

Technical features

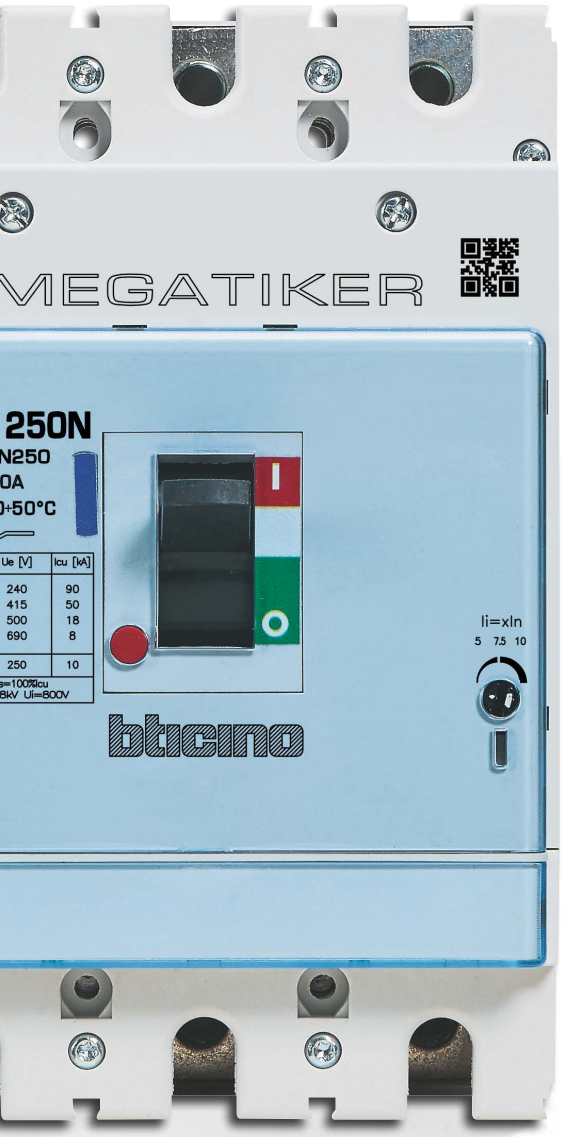
MEGATIKER

RELIABILITY, PROTECTION AND **HIGH PERFORMANCE UP TO 1600 A**

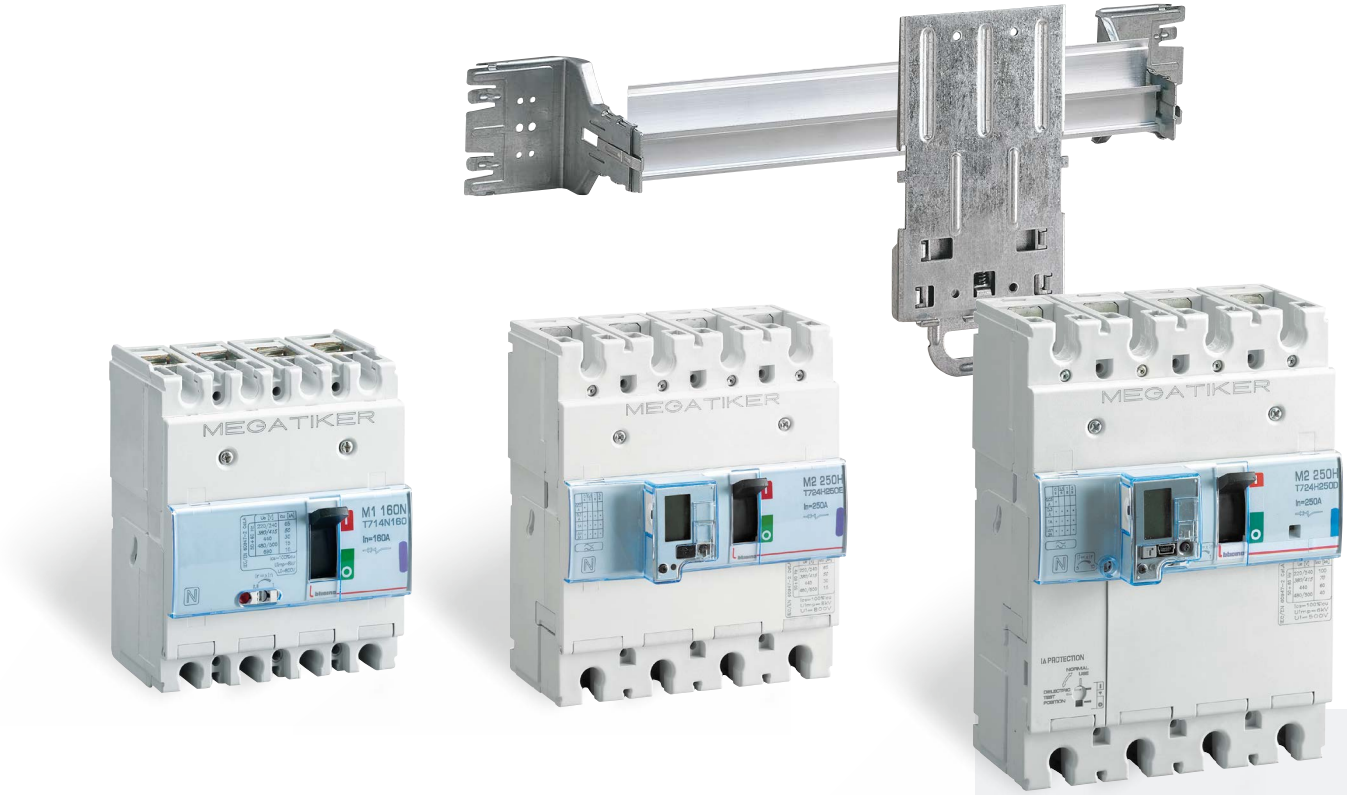
The MEGATIKER range of circuit breakers consists of reliable and precise protection devices that guarantee maximum safety for electrical installations.

MEGATIKER circuit breakers meet the requirements of all installation types.

The various selectivity techniques available help to ensure optimal service continuity, while the high short-circuit-limiting capability ensures a longer service life of the installation. Operation and maintenance are facilitated by the complete range of electrical and mechanical auxiliary components.



Automatic circuit breakers for installation on DIN35 rail

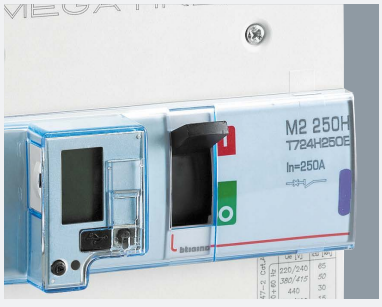


In addition to size 3, 4 and 5 circuit breakers, which are suitable for plate installation only, the MEGATIKER range also includes protection devices suitable for DIN35 rail installation.
The M1 160 and M2 250 circuit breakers are in fact extremely versatile devices, offering maximum protection, state-of-the-art technology, thanks to integrated earth fault protection, earth-leakage protection and measurement functions. Available with different breaking capacities, they are able to offer maximum protection with respect to the service continuity required in the various installations.

In	16	25	40	63	80	100	125	160	200	250	320	400	500	630	800	1000	1250	1600
36 kA			M2 250F															
25 kA			M2 250B															
	M1 160B																	
16 kA																		
	M1 160E																	

EASY IDENTIFICATION

Easy identification of the breaking capacity thanks to the colour-coded marking on the front of the device:



E 16 kA
B 25 kA
F 36 kA

High performance
automatic circuit breakers

With M3 125/160 and M3 250, which have been added to the range of circuit breakers up to 1600A, BTicino offers an ideal solution with high-performance devices from 16 to 1600 A and breaking capacities up to 100 kA.

These circuit breakers are reliable and robust, easy to use and install, and provide effective protection for the installation. They are available in four sizes, in 3 and 4 pole versions, in fixed or draw-out version and with a choice of thermal-magnetic or electronic protection, depending on the desired service level. This offer also includes a range of control and signalling units and connection accessories for easy integration into any electrical installation, regardless of configuration.

NEW M3 125/160 AND M3 250 CIRCUIT BREAKERS, PROTECTION WITH QUALITY, RELIABILITY AND PRECISION

PLATE MOUNTING

SUITABLE FOR EVERY TYPE OF APPLICATION, BOTH IN THE SERVICE OR INDUSTRIAL SECTOR

In: 16 A → 1600 A

Icu: 36 kA → 100 kA (380/415 VA)

PROTECTION:
- THERMAL-MAGNETIC
- ELECTRONIC (FOR M3 250, M4 630 AND M5 1600)

NEWS

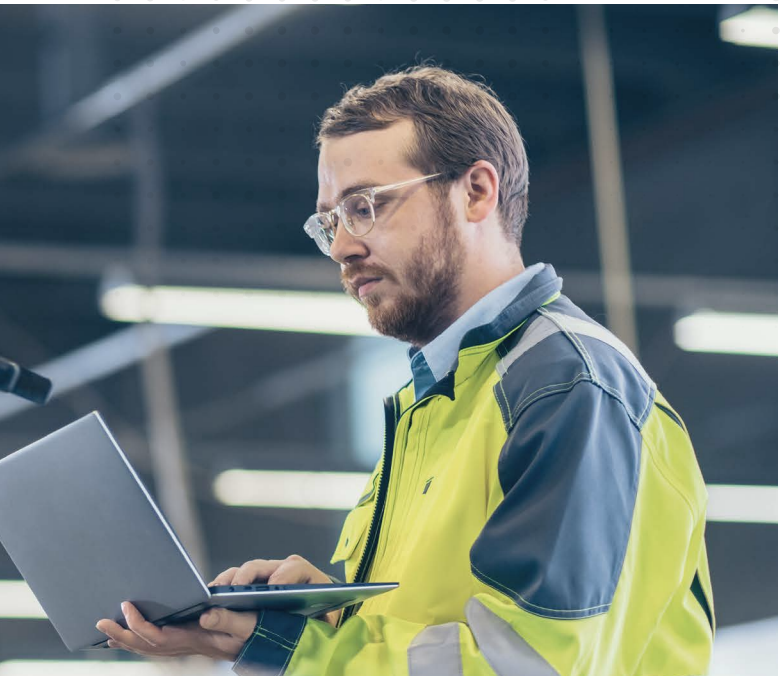
M3 125/160

NEWS

M3 250

M4 630

M5 1600



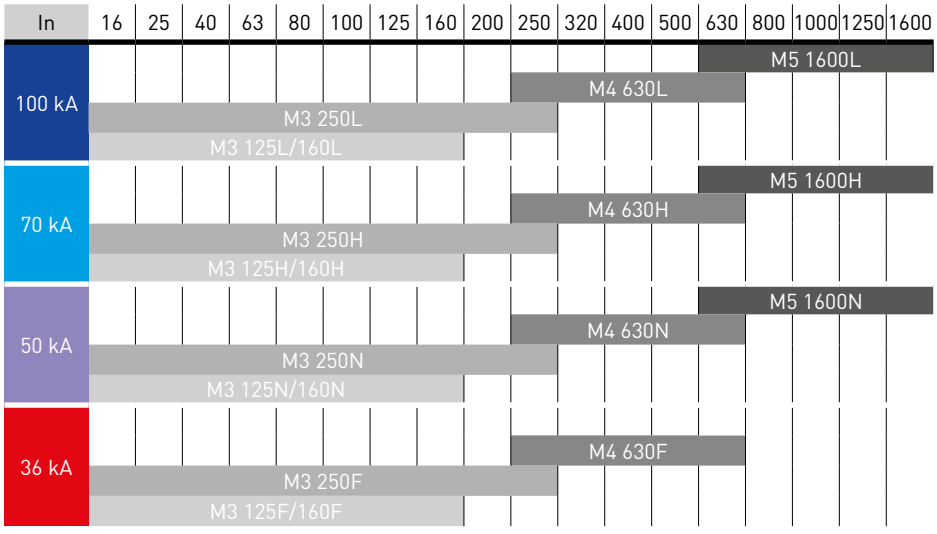
A LONGER SERVICE LIFE FOR THE INSTALLATION

The "Active breaking capacity" system integrated in the new 70 kA and 100 kA M3 circuit breakers is a patented system that significantly reduces the specific through energy in the event of a short circuit, thus increasing the limiting capacity of the devices. Improved limiting capacity means less overheating of cables, less mechanical effects, less electromagnetic interferences, and therefore a longer life for your installation over time.

GUARANTEED HIGH PERFORMANCE LEVELS

AVAILABLE DIMENSIONS

Four sizes are available, with breaking capacities from 36 to 100 kA across the entire range, making them suitable for all types of large service sector and industrial sites.



EASY IDENTIFICATION

Easy identification of the breaking capacity thanks to the colour-coded marking on the front of the device:

F 36 kA | N 50 kA | H 70 kA | L 100 kA

Different versions for all types of installation

The MEGATIKER circuit breakers are available in a wide range of versions to meet all requirements:

- With thermal-magnetic, electronic and magnetic-only shunt trips for motor protection and disconnectors, to guarantee the various levels of protection required
- Fixed, removable and draw-out version to meet maintenance and service requirements
- With earth-leakage module for maximum personal safety
- With or without integrated measuring function

RANGE AND VERSIONS

		M1 160	M2 250	M3 125/160	M3 250	M4 630	M5 1600
No. of POLES	3 P	•	•	•	•	•	•
	4 P	•	•	•	•	•	•
	3 P + N					•	•
	3P + N/2	• [1]	• [1]				
Version	Fixed	•	•	•	•	•	•
	Removable	•	•		•	•	
	Draw-out				•	•	•
Shunt trip	Thermal-magnetic	•	•	•	•	•	•
	Electronic (Li)				•	•	•
	Electronic (Lsi)		•		•	•	•
	Electronic (Lsig)				•	•	•
Options	Integrated earth-leakage protection	•	•	•	•		
	Integrated measurement functions		• [2]			• [2]	• [2]

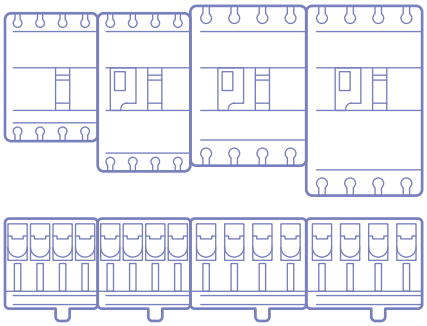
[1]: only thermal-magnetic - [2]: Lsi or Lsig only for electronic

CHOICE OF THE TYPE OF SHUNT TRIP

	Protection against overload		Protection against short circuit			Protection against earth fault	
	Ir	tr	Delayable		Instantaneous	Ig	tg
			Isd	Tsd	Ii		
Thermal-magnetic	A	F			A [1]		
Li - electronic	A	F	A	F	F		
Lsi - electronic	A	A	A	A	A		
Lsig - electronic	A	A	A	A	A	A	A

A: Adjustable (see details in the catalogue pages)
F: Fixed
1: Except for M1 160: Ii fixed

Electronic shunt trips can be adjusted using the pushbuttons. The adjustments made are visible on the LCD display.



OPTIMIZED INTEGRATION
The MEGATIKER M1 160 and M2 250 have the same depth and can be installed side by side on DIN 35 rails. The same applies to the M3 125/160 and M3 250 circuit breakers.

Currents, voltages, frequency, power, energy, THD.

Measurement integrated for electronic circuit breakers

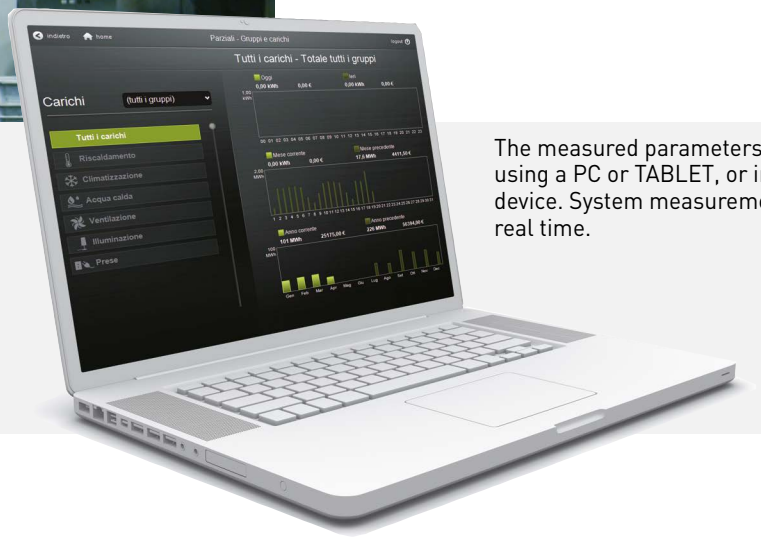
Integrated measurement means:

- Optimised installation protection against electrical faults
- Measurement of electrical network parameters to optimise consumption
- Reduced time for wiring measuring devices
- Recovery of space in the electrical panel

With the MEGATIKER range of electronic circuit breakers with integrated measurement functions, it becomes very easy and straightforward to keep the system and the various electrical parameters under control without the need for additional monitoring devices.

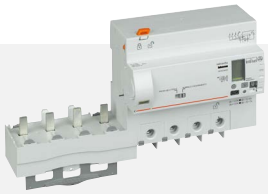
The measured values are shown on the LCD display on the front of the circuit breakers

The integrated measurement is available for the M2 250, M4 630 and M5 1600 from 40 to 1600 A electronic circuit breakers.



The measured parameters can also be viewed remotely using a PC or TABLET, or in the field with a 3.5" TOUCH device. System measurement and control are always in real time.

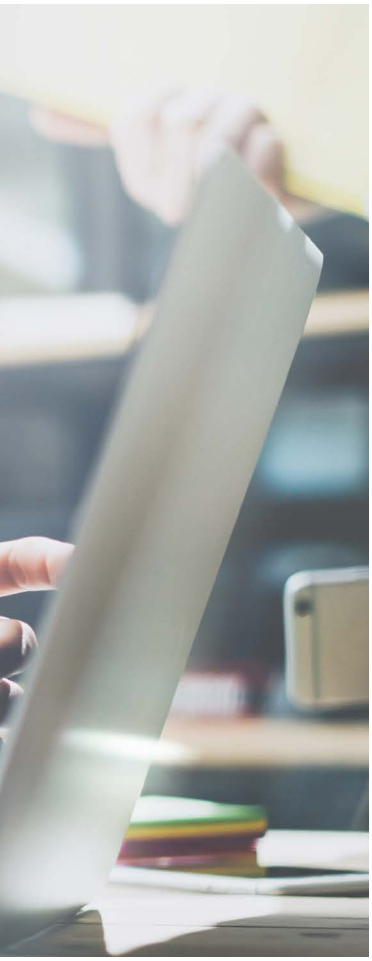
INTERNAL BATTERY
Electronic protection units have an internal battery, which allows adjustments to be made even when the circuit breaker is OFF.



STANDARD SOLUTIONS
BTicino also offers a wide range of measuring instruments, and measuring control units and devices for monitoring the electrical parameters of installations.

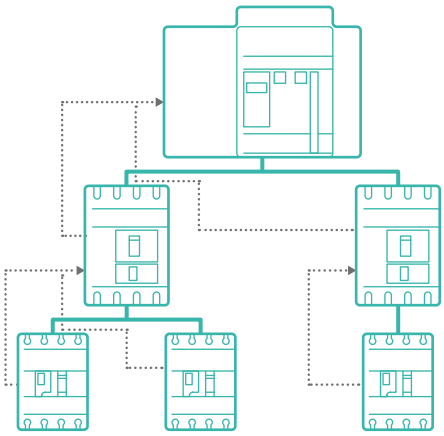
Integrated measurement functions are also available in the MEGABREAK and BTDIN ranges.

Total selectivity
for maximum service continuity



The selectivity between circuit breakers ensures maximum service continuity. It is even more optimised with the MEGATIKER range of devices.

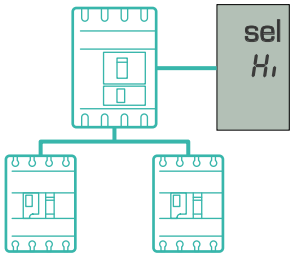
In critical configurations, the logical and dynamic selectivity offered by electronic MEGATIKER offers high performance and total selectivity.



LOGIC SELECTIVITY

This "intelligent" selectivity is achieved through the communication between electronic circuit breakers linked together via an external wired connection. It ensures total selectivity among different levels, as well as a reduction in thermal and electrodynamic stresses on cables or bars.

Cable connection for logical selectivity

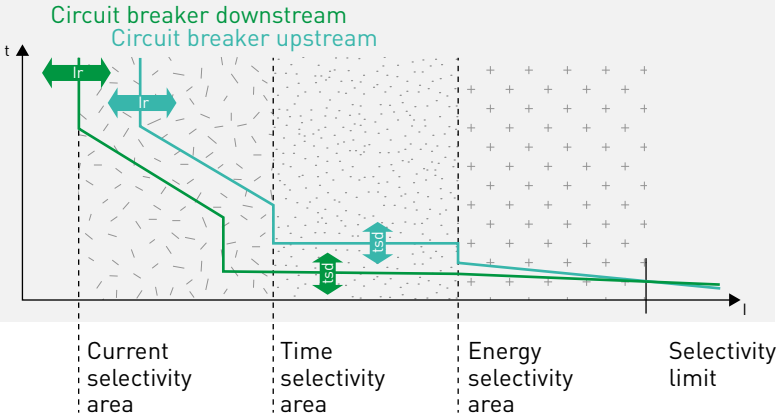


DYNAMIC SELECTIVITY

Electronic MEGATIKER circuit breakers have a selector switch for choosing the type of selectivity:

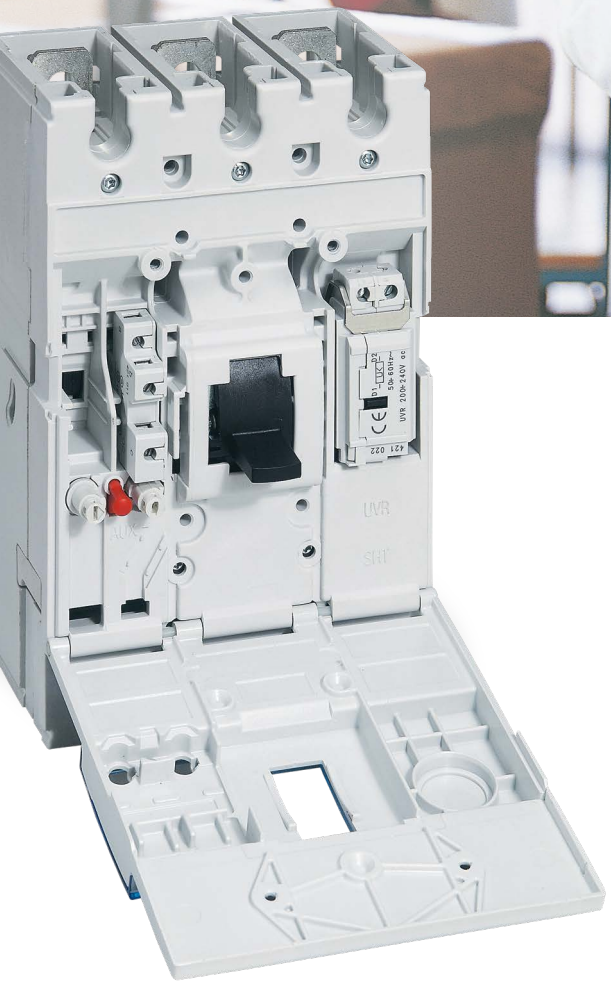
- Low for a normal level of selectivity
- High for a high level of selectivity

When electronic circuit breakers are set to High, a slight tripping delay is introduced, which allows for a high level of selectivity.



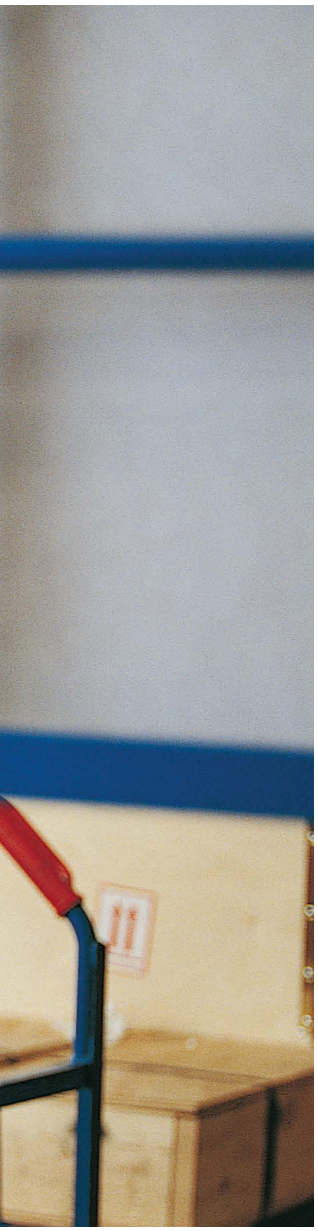
TIME AND CURRENT SELECTIVITY

The adjustment accuracy of electronic circuit breakers ensures excellent selectivity in terms of both current and time.



A wide range of accessories

for easy installation and wiring

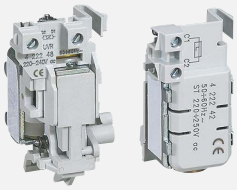


With the vast range of possibilities offered by the numerous auxiliaries and accessories, MEGATIKER circuit breakers can be configured to adapt to any installation need.

ELECTRIC AUXILIARIES

AUXILIARY CONTACTS
auxiliary and alarm contacts, the same for the whole range

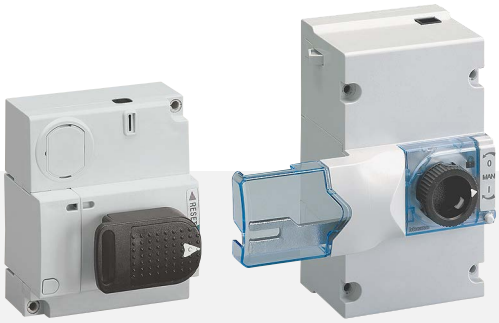
SHUNT TRIPS
current release and minimum voltage shunt trips for M1, M2 and M3



NEW SHUNT TRIPS
for M4 and M5

NO. OF AUXILIARIES THAT CAN BE INSTALLED

	Auxiliary contacts	Alarm contacts	Shunt trips
M1 160	1	1	1
M2 250	1	1	1
M3 125/160	1	1	1
M3 250	2	1	1
M4 630	2	2	1
M5 1600	3	1	1

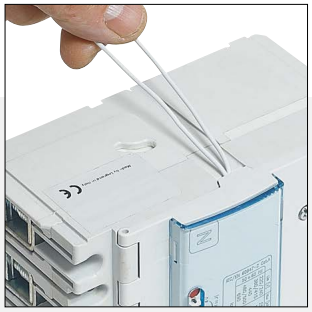


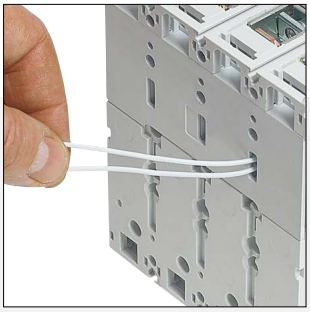
ROTARY HANDLES AND MOTOR CONTROLS

- Direct or vary-depth rotary handles for all the range (also emergency)
- Motor controls available for front or side installation depending on circuit breaker version

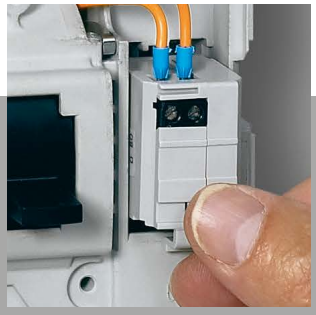
CONNECTION ACCESSORIES

- Clamps, front and rear terminals, for connecting the circuit breaker and meeting all the wiring requirements, to simplify the work for the panel builder.





Three options for the output connection wires .



The auxiliary devices are installed in preset housings under the front door .

The side motor control is mounted on the rail next to the circuit breaker

Motor controls and interlocks

Motor controls for M1 160 and M2 250 circuit breakers are available in two versions:
- for front mounting
- for side mounting

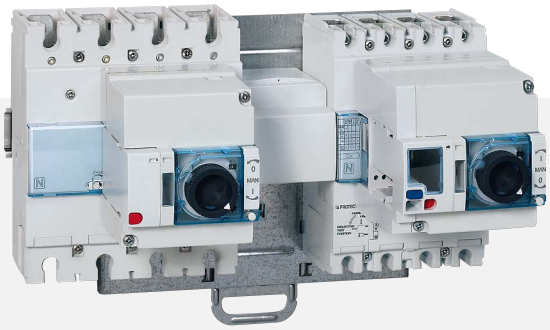
They can be supplied with either direct or alternating current, with voltages from 24 to 230 V.

The front motor control allows access to the adjustments.

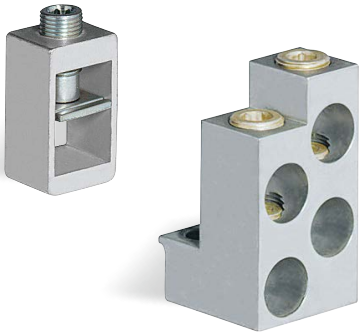
The other circuit breakers can be equipped with motorised controls, already available in the catalogue of the previous range.

The interlocking device for M1 160 and M2 250 greatly simplifies power switching.
The features are:
- Extremely easy to install
- Compact
- Requires no changes on the circuit breaker
- Can be mounted on DIN35 rails, allowing installation even in small distribution boards

M1 160 and M2 250 circuit breakers can be used together on the same mechanical interlocking device



The mechanical interlock can also be used with motorised circuit breakers



Connection accessories for all configurations

Connection plates, clamps, front and rear terminals....

The MEGATIKER range has all the accessories needed for connection upstream and downstream of circuit breakers by means of wires or busbars in all the configurations

CONNECTION ACCESSORIES

	Clamps		Long terminals	Front terminals	Rear terminals
	Standard	Increased			
M1 160	•	•		•	•
M2 250	•			•	•
M3 125	•	•	•	•	•
M3 160		•	•	•	•
M3 250	•		•	•	•
M4 630	•	•	•	•	•
M5 1600	•	•		•	•

FRONT TERMINALS
They are used for connecting large cross section cables.

REAR TERMINALS
They can be mounted horizontally or vertically.

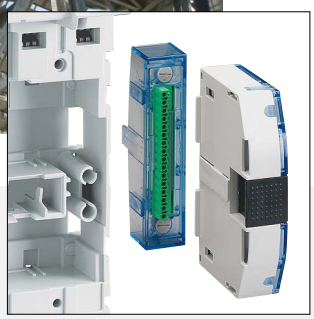
PROTECTION COVERS
They guarantee an IP 2X protection degree at the connections

CLAMPS
They allow the connection of copper and aluminium cables or bars, even of large cross sections (depending on version)

Removable and draw-out versions for an easy maintenance

Removable and draw-out versions allow replacing a faulty circuit breaker in a few minutes without having to put the entire system out of service.

The bases for the removable and draw-out versions have the same connection options as the fixed circuit breakers.



Thanks to the new side terminal block with front connections, the power part can be disconnected, while the electrical auxiliaries remain powered.

Thanks to the internal battery, the electronic protection unit can be programmed before the circuit breaker is inserted into its base.

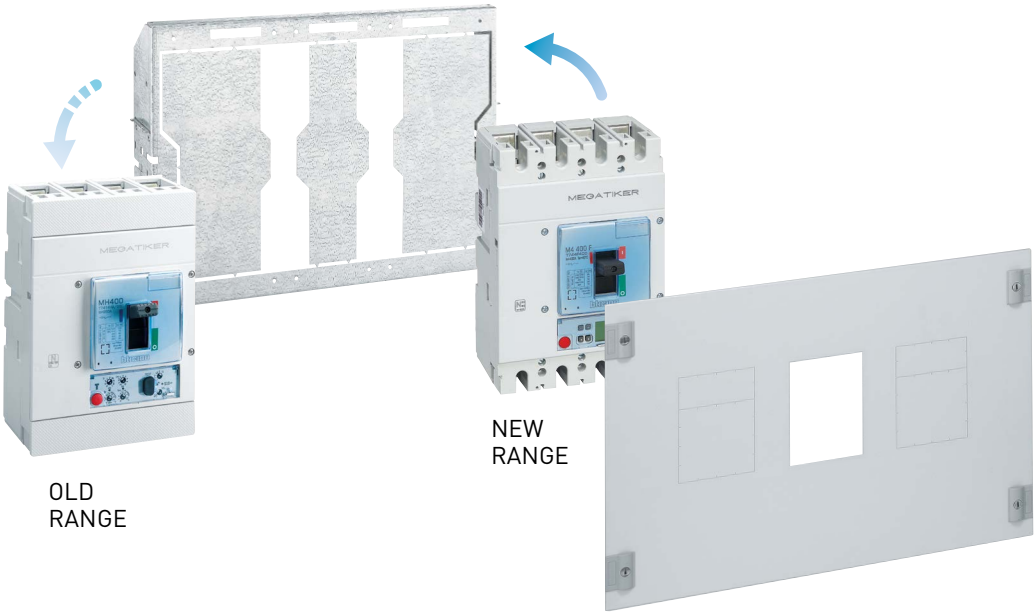
The key or padlock locking system prevents the circuit breaker from being reinserted on the live base during maintenance operations.

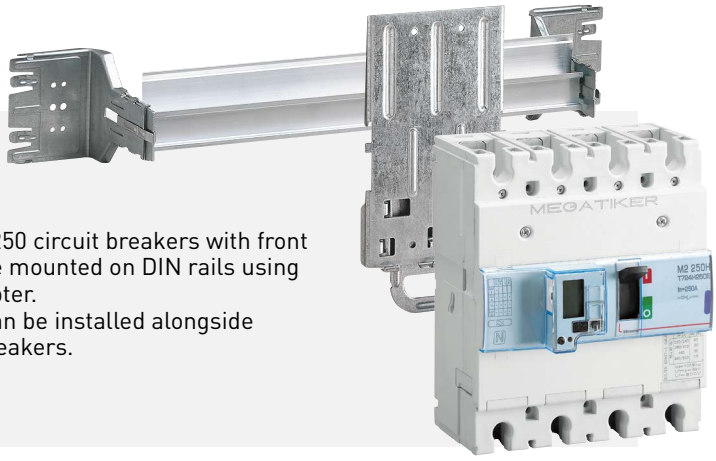
DRAW-OUT VERSION
FOR M3, M4 AND M5
The draw-out mechanism is very easy to install and attaches directly to the circuit breaker base. Connection/disconnection is by means of a mechanism with operating handle. The mechanism has three positions, indicated by coloured indicators:

Connected Test Drawn-out

Easy maintenance and update

Retrofit: the new MEGATIKER range of circuit breakers is fully compatible with the previous one, making it possible to replace circuit breakers in the panel without specific adaptations being required.





M1 160 and M2 250 circuit breakers with front terminals can be mounted on DIN rails using the specific adapter.
These devices can be installed alongside BTDIN circuit breakers.

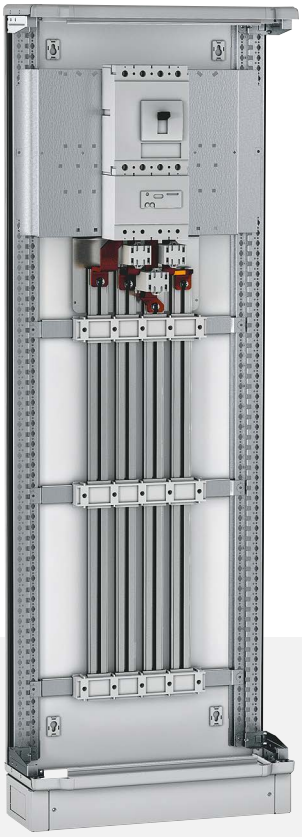
MEGATIKER on TIFAST EASY 250/400
horizontal division system

Safe and reliable distribution system

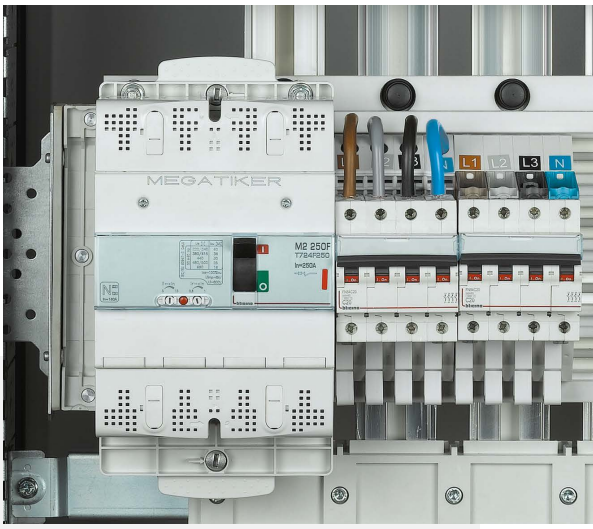
Optimised distribution provides a complete and coherent system for the distribution of electricity in the panel:

- Optimised busbars ("C" section, aluminium and copper)
- Preset connections for circuit breakers and busbars
- Horizontal distribution modules with automatic circuit breaker connection (can also be connected when voltage is present)

All these components have been tested with BTicino devices and ensure maximum safety in the installation and maintenance of panels, in accordance with IEC EN 61439.



Powering of the POWER TIFAST vertical bar system



Mounting alongside modular circuit breakers powered by the TIFAST EASY 125 distribution system

ACCESSORY TABLE

Control and connection electric accessories

Accessories	No. of poles	Vn or In	M1 160	
ELECTRIC ACCESSORIES				
Auxiliary and alarm contacts (1NO/NC)			M7X01	
Current release shunt trips (ST)		12 Vac / dc	M7S012	
		24 Vac / dc	M7S024	
		48 Vac / dc	M7S048	
		100 to 130 Vac	M7S110	
		200 to 277 Vac	M7S230	
		380 to 480 Vac	M7S415	
Minimum voltage shunt trips (UVR)		12 Vac / dc	M7U012	
		24 Vac / dc	M7U024	
		24 Vac		
		24 Vdc		
		48 Vac / dc	M7U048	
		48 Vdc		
		110-130 Vac /dc	M7U110	
		200 to 240 Vac	M7U230	
		277 Vac	M7U277	
		380 to 415 Vac	M7U415	
		440 to 480 Vac	M7U480	
Emergency module for minimum voltage shunt trips		24 Vac / dc	M7000E/024	
Time-delay modules for minimum voltage shunt trips		230 Vac	M7000MR/230	
		400 Vac	M7000MR/400	
Shunt trips for modules M7000...			M7UEM	
MOTOR CONTROLS AND ACCESSORIES				
Multi-voltage motor controls		24 to 230 Vac /dc	M7M01	
Spring charging motor controls		24 Vac / dc		
		48 Vac / dc		
		110 Vac		
		230 Vac / dc		
		230 Vac		
Direct-operated motor controls for M5 630 to 1250		24 Vac / dc		
		48 Vac / dc		
		110 Vac / dc		
		230 Vac / dc		
Direct-operated motor controls for M5 1600		24 Vac / dc		
		48 Vac / dc		
		110 Vac / dc		
		230 Vac / dc		
Padlock locks for motor controls			M7M17	
Key lock (support)				
RONIS key locks for motor controls			M7M14	
PROFALUX key locks for motor controls			M7M15	
DIN35 rail plate for motor controls			M7M08	
Universal flat key for support M7M60				
EL43525 (MAP A) universal key for support M7M60				
EL43363 (MAP B) universal key for support M7M60				
Universal star key for support M7M60				
ROTARY HANDLES AND ACCESSORIES				
Direct (for circuit breakers without earth-leakage protection)			M7R01	
Direct (for circuit breakers with earth-leakage protection)			M7R02	
Direct for emergency (for circuit breakers without earth-leakage protection)			M7R03	
Direct for emergency (for circuit breakers with earth-leakage protection)			M7R04	
Vary-depth (for all versions)			M7R05	
Vary-depth for emergency (for all versions)			M7R06	
RONIS key locks for direct rotary handles			M7R07	
PROFALUX key locks for direct rotary handles			M7R08	
RONIS key locks EL43525 map for direct rotary handles			M7R07A	
RONIS key locks for vary-depth rotary handles			M7R10	
PROFALUX key locks for vary-depth rotary handles			M7R11	
Key lock for direct and vary-depth rotary handles				
Key locks for direct rotary handles (support)				
Key lock for vary-depth rotary handles (support)				
Universal flat key for support M7R30 and M7R31				
EL43525 (MAP A) universal key for support M7R30 and M7R31				
EL43363 (MAP B) universal key for support M7R30 and M7R31				
Universal star key for support M7R30 and M7R31				
Pair of advanced auxiliary contacts 1NO+1NC for rotary handle			M7R13	

	M2 250	M3 125/160	M3 250	M4 630	M5 1600
	M7X01	M7X01	M7X01	M7X01	M7X01
	M7S012	M7S012	M7S012		
	M7S024	M7S024	M7S024	M7C024	M7C024
	M7S048	M7S048	M7S048	M7C048	M7C048
	M7S110	M7S110	M7S110	M7C110	M7C110
	M7S230	M7S230	M7S230	M7C230	M7C230
	M7S415	M7S415	M7S415	M7C400	M7C400
	M7U012	M7U012	M7U012		
	M7U024	M7U024	M7U024		
				M7T024	M7T024
				M7T024C	M7T024C
	M7U048	M7U048	M7U048		
				M7T048C	M7T048C
	M7U110	M7U110	M7U110		
	M7U230	M7U230	M7U230	M7T230	M7T230
	M7U277	M7U277	M7U277		
	M7U415	M7U415	M7U415	M7T400	M7T400
	M7U480	M7U480	M7U480		
	M7000E/024	M7000E/024	M7000E/024	M7000E/024	M7000E/024
	M7000MR/230	M7000MR/230	M7000MR/230	M7000MR/230	M7000MR/230
	M7000MR/400	M7000MR/400	M7000MR/400	M7000MR/400	M7000MR/400
	M7UEM	M7UEM	M7UEM	M7TMEV	M7TMEV
	M7M01				
			M7M024	M7475P/024	M7875P/024
			M7M048	M7475P/048	M7875P/048
			M7M110	M7475P/110 *	
			M7M230	M74D230	
				M7475P/230 *	M7875P/230 *
					M7875B24
					M7875B48
					M7875B110
					M7875B230
					M7875A24
					M7875A48
					M7875A110
					M7875A230
	M7M17		M7M61		
			M7M60		
	M7M14			M7M405	M7M405
	M7M15			M7M415	M7M415
	M7M09				
		M7K01	M7K01		
		M7K02	M7K02		
		M7K03	M7K03		
		M7K04	M7K04		
	M7R01	M7R20	M7R24	M7447	M7647
	M7R02				
	M7R03	M7R21	M7R25	M7R14	
	M7R04				
	M7R05	M7R22	M7R26	T7449	T7649
	M7R06	M7R23	M7R27	T7449E	T7649E
	M7R07			M7R15	M7R15
	M7R08			M7R16	M7R16
	M7R07A			M7R15A	M7R15A
	M7R10				
	M7R11				
				M7163	M7163
			M7R30		
		M7R31	M7R31		
		M7K01	M7K01		
		M7K02	M7K02		
		M7K03	M7K03		
		M7K04	M7K04		
	M7R13	M7R32	M7R32		

ACCESSORY TABLE

Installation and conversion accessories

Accessories	No. of poles	Vn or In	M1 160	
CONNECTION ACCESSORIES				
Offset long front terminals	3P		M7A01	
	4P		M7A02	
Long front terminals to be chosen according to the number of poles		up to 1250A		
		1600 A		
Flat offset long rear terminals	3P			
	4P			
Flat long rear terminals	3P			
	4P			
Screw and nut drawer for cable lug or bar mounting	3P		M7X08	
	4P		M7X18	
Clamps for high capacity busbars or cables	3P		M7X07	
	4P		M7X17	
Clamps for standard busbars or cables	3P		M7X27	
	4P		M7X37	
MECHANICAL INTERLOCKS				
Interlock plates for fixed version			M7X03	
Interlock plates for removable and draw-out version				
Mechanical interlock for fixed circuit breakers				
Mechanical interlock for fixed electronic circuit breakers				
CLAMP PROTECTION COVERS AND ACCESSORIES				
Protection covers	3P		M7C05	
	4P		M7C06	
Protection covers without bottom bases	3P			
	4P			
Bottom bases	3P			
	4P			
Lowered protection covers for TIFAST system	4P		M7C09	
VARIOUS FINISHING ACCESSORIES				
Padlock lock for handle (OFF)			M7X02	
Insulating shields between the phases (12 bags of 3 insulators each)			M7X04	
Insulating shields between the phases	3P			
	4P			
Plate for circuit breakers on DIN35 rail			M7X05	
Plate for circuit breakers with integrated earth-leakage protection on DIN35 rail			M7X15	
Installation plate for circuit breakers with rear terminals in non-MAS structures			M7A09	
Fixing screws (12) on DIN35 rail			M7X12	
Generic seal kit			M7X23	
Cables for auxiliary power supply (20 pcs)				
Power supply with 24 Vac / dc input				
MODBUS RS485 communication and supply interface				
Front cover plates for 3P-4P circuit breakers				
Front cover plates for 4P+earth leakage circuit breakers				
Blanking module				
DRAW-OUT VERSION CONVERSION ACCESSORIES				
Removable and draw-out bases for front terminals	3P			
	4P			
	4P+earth leakage			
Removable and draw-out bases for flat rear terminals	3P			
	4P			
	4P+earth leakage			
Kits and tangs to apply to the circuit breakers	3P			
	4P			
Conversion kit to apply to the bases	3P			
	4P			
	4P+earth leakage			
FINISHING ACCESSORIES FOR DRAW-OUT VERSION				
Handle for circuit breaker removal				
Pair of extractors for draw-out version circuit breakers				
Auxiliary contacts for draw-out version (max. 4)				
In/out signalling contact				
24-contact connector for electrical auxiliaries				
Front cover for draw-out version with door closed for 3P-4P circuit breakers				
Front cover for draw-out version with door closed for 4P + earth-leakage circuit breakers				
Front cover plate for draw-out version for motor controls				
Front cover plate for draw-out version for rotary handle				
In/out key lock				
In/out key lock with motors or rotary handles				
PROFALUX key lock for draw-out base				
RONIS key lock for draw-out base				
Key locks for removable version (plastic)				
Key locks for draw-out version (plastic)				
Padlock locks				

*** DC versions available on request** **** 2 cables per clamp** ***** 4 cables per clamp**

	M2 250	M3 125/160	M3 250	M4 630	M5 1600
	M7A03	M7A50	M7A52	M7430/3	M7940/3S
	M7A04	M7A51	M7A53	M7430/4	M7940/4S
				M7430	M7940/2
					M7940/3
		M7A54	M7A56	M7450/P	M7960
		M7A55	M7A57	M7451/P	M7961
					M7950
					M7951
	M7X08				
	M7X18				
	M7X09	M7X52		M7400/2 **	M7900/4 ***
	M7X19	M7X53			
		M7X50	M7X54	M7400	M7900/2 **
		M7X51	M7X55		
	M7X03	M7I04	M7I05	M7197N	M7198N
			M7I03		M7298N
		M7I01	M7I01		
		M7I02	M7I02		
	M7C07	M7C20	M7C22	M7C11	M7C13
	M7C08	M7C21	M7C23	M7C12	M7C14
				M7475	M7935
				M7476	M7936
				M7490	
				M7491	
	M7C10				
	M7X02			M7045	M7055
	M7X04	M7X02	M7X02	M7295	M7695
		M7F01	M7F01		
		M7F02	M7F02		
	M7X06				
	M7X16				
	M7A10			M7255	
	M7X12				
	M7X23				
	M7X22				
	M7ALIM				
	M7COM				
				M7152	M7152
				M7162	
				M7152T	M7152T
			M7B50	M7B13	M7B25
			M7B51	M7B14	M7B26
				M7B17	
				M7B15	M7B27
				M7B16	M7B28
				M7B18	
			M7B52	M7B11	M7B29
			M7B53	M7B12	M7B30
			M7B54	M7B22	
			M7B55	M7B23	
				M7B24	
				MT7412	MT7412
				M7B19	
			M7B05	M7B21	M7B21
			M7B10	MT7910N	MT7910N
				M7B20	
			M7B60	MT7457PC	
			F15/7500P6	MT7457PC/D	
			M7B61		
			M7B62		
				MT7959	
					MT7959/2
				M7B33	M7B33
				M7B34	M7B34
			M7B64		
			M7B63		
			M7B65		

M1 160E/B

Thermal magnetic circuit breakers

T713...

T714...

M1 160 - THERMAL MAGNETIC

Thermal-magnetic circuit breakers for installation on DIN35 rail. Circuit breaker and contact status display. Can be equipped with auxiliary and alarm contacts, shunt trips, multi-voltage motor control and mechanical interlock.

Supplied with circuit breakers:
- Phase insulators and bar or lug connections

	Item			
	M1 160E		**M1 160B**	
Icu (kA)	16		25	
In (A)	3P	4P	3P	4P
16	**T713E16**	**T714E16**	**T713B16**	**T714B16**
25	**T713E25**	**T714E25**	**T713B25**	**T714B25**
40	**T713E40**	**T714E40**	**T713B40**	**T714B40**
63	**T713E63**	**T714E63**	**T713B63**	**T714B63**
80	**T713E80**	**T714E80***	**T713B80**	**T714B80***
100	**T713E100**	**T714E100***	**T713B100**	**T714B100***
125	**T713E125**	**T714E125***	**T713B125**	**T714B125***
160	**T713E160**	**T714E160***	**T713B160**	**T714B160***

(*) versions with 3P+N/2 protection

Earth-leakage thermal magnetic circuit breakers

T714E...DB

T714...D

M1 160 - EARTH-LEAKAGE THERMAL MAGNETIC

Thermal-magnetic circuit breakers with integrated earth-leakage module for panel or DIN35 rail installation. Circuit breaker and contact status display. Can be equipped with auxiliary and alarm contacts, shunt trips, multi-voltage motor control and mechanical interlock.

Supplied with circuit breakers:
- Phase insulators and bar or lug connections

	Item			
	M1 160E		**M1 160B**	
Icu (kA)	16		25	
In (A)	4P	3P+N/2	4P	3P+N/2
16	**T714E16DB**		**T714B16D**	
25	**T714E25DB**		**T714B25D**	
40	**T714E40DB**		**T714B40D**	
63	**T714E63DB**		**T714B63D**	
80		**T714E80DB**		**T714B80D**
100		**T714E100DB**		**T714B100D**
125		**T714E125DB**		**T714B125D**
160		**T714E160DB**		**T714B160D**

NOTE: for other breaking capacities please contact the BTicino sales network directly

M1 160E/B

contacts and shunt trips

M7X01

Item	AUXILIARY AND ALARM CONTACTS	
M7X01	1NO/NC 6A/230 Vac	Max. No. of contacts that can be installed 2 (1 AUX + 1 AL) reference standard: CEI EN 60947-5-1 category of use: AC12 switching time for opening: 6.5 ms switching time for closing: 5 ms switching time for tripping: 1 ms

M7S...

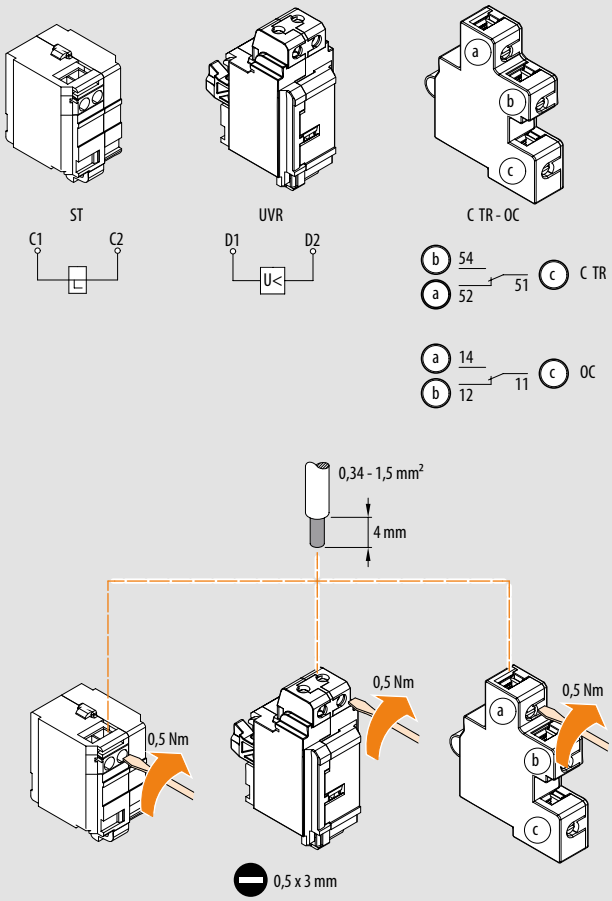
Item	CURRENT RELEASE SHUNT TRIPS (ST)	
M7S012	12 Vac / dc	reference standard: IEC 23-105 operating voltage: 70 to 110 % Vn circuit breaker opening time: < 50 ms absorbed power: 400 VA/W
M7S024	24 Vac / dc	
M7S048	48 Vac / dc	
M7S110	100 to 130 Vac	
M7S230	200 to 277 Vac	
M7S415	380 to 480 Vac	

M7U...

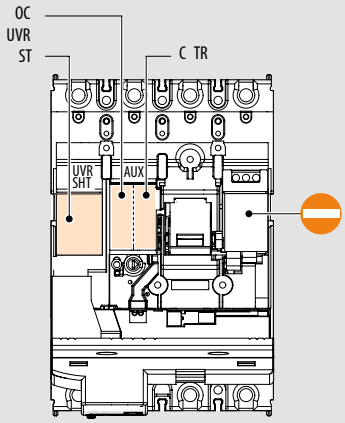
Item	MINIMUM VOLTAGE SHUNT TRIPS (UVR)	
M7U012	12 Vac / dc	reference standard: IEC 23-105 tripping voltage: 35 to 70 % Vn reset voltage: 85 to 110 % Vn circuit breaker opening time: < 50 ms absorbed power: 4 VA
M7U024	24 Vac / dc	
M7U048	48 Vac / dc	
M7U110	110-130 Vac /dc	
M7U230	200 to 240 Vac	
M7U277	277 Vac	
M7U415	380 to 415 Vac	
M7U480	440 to 480 Vac	

	EMERGENCY AND TIME-DELAY MODULES	
M7000E/024	24 Vac / dc	emergency modules for minimum voltage shunt trips M7UEM
M7000MR/230	230 Vac	time-delay modules for minimum voltage shunt trips M7UEM. They introduce a tripping delay of 800 ms to prevent untimely opening of the circuit breakers.
M7000MR/400	400 Vac	
M7UEM		shunt trip for modules M7000... For MEGATIKER M1, M2 and M3

SHUNT TRIP AND CONTACT CONNECTIONS



SHUNT TRIP AND CONTACT HOUSING



MAX. NO. OF ACCESSORIES THAT CAN BE INSTALLED

	3P		4P			4P+earth leakage	
OC	1	1	1	1	1	1	1
CTR	1	1	1	1	1	1	1
EC TR (Default)	0	0	0	0	0	1	1
ST	1	0	2 max	1	0	1	0
UVR	0	1	0	1	1 max	0	1

CONTACT OUTPUT

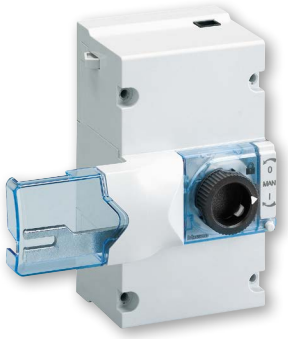
V	Resistive/Inductive (A)
24 Vdc	10/5
48 Vdc	1.3/0.7
110 Vdc	0.4/0.3
230 Vdc	0.3/0.2
110 Vac	10/4
230 Vac	6/2

TECHNICAL DATA OF THE ST SHUNT TRIPS

Vn	Peak current (A)	Coil resistance (Ω)
12 Vac / dc	15	0.78
24 Vac / dc	7.5	3.2
48 Vac / dc	5.5	8.1
100 to 130 Vac	2.5	35.4
200 to 277 Vac	1.5	146.5
380 to 480 Vac	0.9	427.3

M1 160E/B

motor controls



M7M01

Item	MULTI-VOLTAGE SIDE MOTOR CONTROLS
M7M01	Type of motor: direct Installation: side Rated voltage: 24 to 230 Vac/dc multi-voltage Opening time: ≤ 90 ms Closing time: ≤ 100 ms Mechanical durability (manoeuvres): 8000 Peak absorbed power: 40 W Maintenance absorbed power: 4 W Maximum frequency of use: 4 manoeuvres/minute

M7M07

M7M14

M7M08

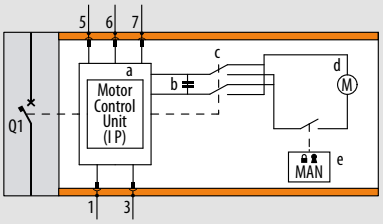
Item	ACCESSORIES FOR SIDE MOTOR CONTROLS
M7M17	selector with motor padlock locking system (max. 3 padlocks with diameters between 4 and 8 mm)
M7M14	Ronis key lock
M7M15	Profalux key lock
M7M08	plate for installation on DIN35 rail with side motor controls

NOTE: for other motor types please contact the BTicino sales network directly

CHARGE TIMES

Vn (Vac/dc)	Charge (s)		Inversion (ms)	Manoeuvre (ms)
	ac (s)	dc (s)	ac/dc	ac/dc
24	2.3	1.6	3	80
48	0.9	0.85	3	80
110	0.6	0.6	3	80
230	0.5	0.5	3	80

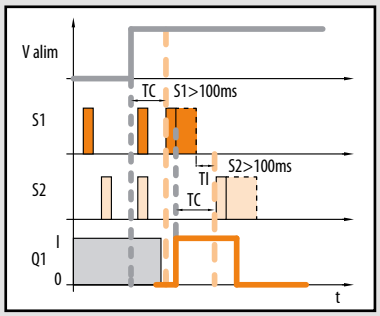
WIRING DIAGRAMS

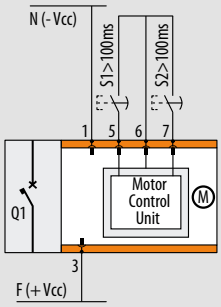


a Motor electronics control unit
b Motor energy storage system
c Motor reverse drive contacts
d Motor
e Selector switch in MAN position: no electrical manoeuvring possible.

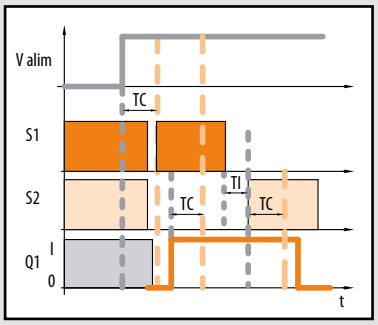
1-7 Power supply wiring connector and electric control
S1 Closing control
S2 Opening control
TI Command reverse time 3mS
TC Charge time
No manoeuvring possible

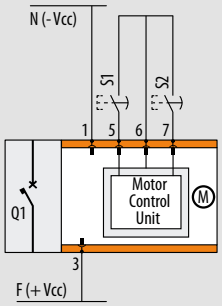
Permanent power supply pulse control





Permanent power supply held control



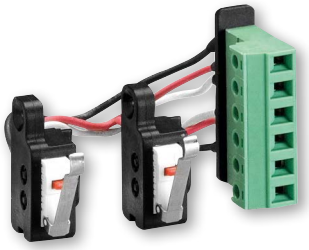


M7R01

M7R05

Item	DIRECT AND VARY-DEPTH ROTARY HANDLES
M7R01	Direct rotary handle for circuit breakers without earth-leakage protection
M7R02	Direct rotary handle for circuit breakers with earth-leakage protection
M7R03	Emergency direct rotary handle for circuit breakers without earth-leakage protection
M7R04	Emergency direct rotary handle for circuit breakers with earth-leakage protection
M7R05	Vary-depth rotary handle (for all versions)
M7R06	Emergency vary-depth rotary handle (for all versions)

M7R07

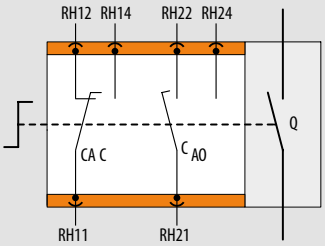


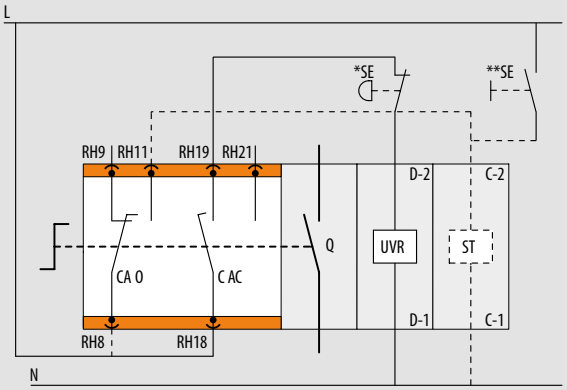
M7R13

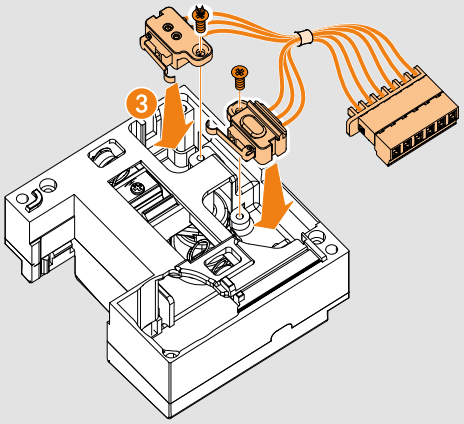
	ACCESSORIES AND KEY LOCKS FOR ROTARY HANDLES
M7R13	Pair of advanced auxiliary contacts 1NO+1NC
M7R07	RONIS key lock for direct rotary handles
M7R08	PROFALUX key lock for direct rotary handles
M7R07A	RONIS key lock for direct rotary handles EL43525 map
M7R10	RONIS key lock for vary-depth rotary handles
M7R11	PROFALUX key lock for vary-depth rotary handles

DIAGRAMS

Auxiliary contact item M7R13

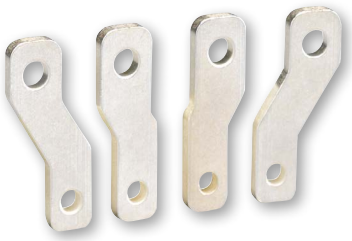






M1 160E/B

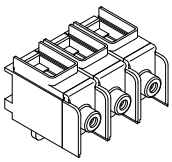
connection accessories



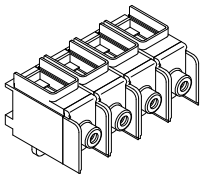
M7A02

Item	FRONT TERMINALS
M7A01	Offset long front terminals for 3P circuit breakers
M7A02	Offset long front terminals for 4P circuit breakers

M7X18



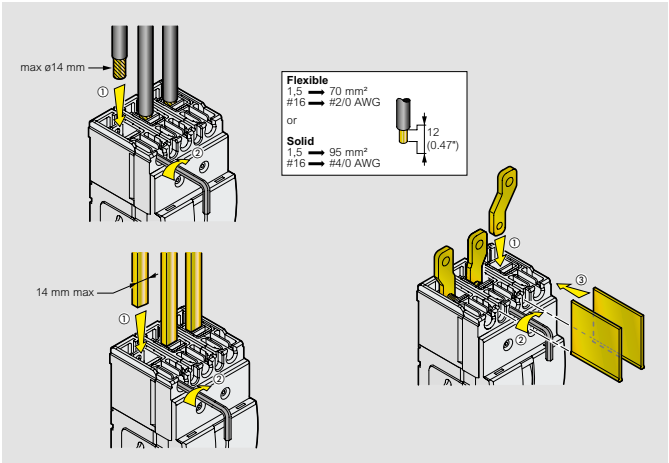
M7X07



M7X17

M7X37

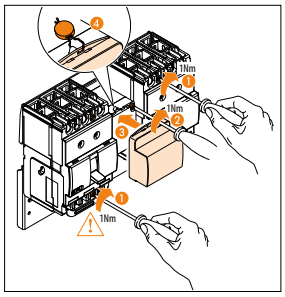
Item	CLAMPS FOR ALUMINIUM AND COPPER CABLES	
M7X08	Screw and nut lug drawer for 3P circuit breakers	
M7X18	Screw and nut lug drawer for 4P circuit breakers	
M7X07	Clamps for 3P circuit breakers	Flexible cable: 1x120 mm²
M7X17	Clamps for 4P circuit breakers	Rigid cable: 1x150 mm² Busbar: 18 mm
M7X27	Clamps for 3P circuit breakers	Flexible cable: 1x70 mm²
M7X37	Clamps for 4P circuit breakers	Rigid cable: 1x95 mm² Busbar: 14 mm



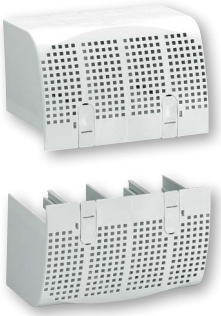
M1 160E/B

interlock, protection covers and various accessories

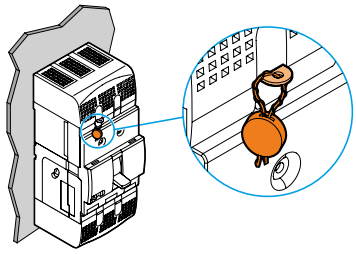
M7X03



Item	MECHANICAL INTERLOCK
M7X03	interlock for fixed version



M7C06



Item	CLAMP PROTECTION COVERS
M7C05	Clamp protection cover for 3P circuit breakers
M7C06	Clamp protection cover for 4P circuit breakers
M7C09	Lowered clamp protection cover for 4P circuit breakers with TIFAST system

M7X04

M7X23

Item	VARIOUS INSTALLATION ACCESSORIES AND SPARE PARTS
M7X02	Handle padlock locking system (OFF) (max. 3 padlocks with diameters between 4 and 8 mm)
M7X04	Insulating shields between the phases (12 bags of 3 insulators each)
M7X05	Plate for circuit breakers on DIN35 rail
M7X15	Plate for circuit breakers with integrated earth-leakage protection on DIN35 rail
M7A09	Installation plate for circuit breakers with rear terminals in non-MAS structures
M7X12	KIT of 12 fixing screws for MEGATIKER M1 160 and M2 250 on DIN35 rail
M7X23	Generic seal kit

M2 250B/F
thermal magnetic

T723...

T724...

M2 250 - THERMAL MAGNETIC

Thermal-magnetic circuit breakers for installation on DIN35 rail. Circuit breaker and contact status display. Can be equipped with auxiliary and alarm contacts, shunt trips, multi-voltage motor control and mechanical interlock.

Supplied with circuit breakers:
- Phase insulators and bar or lug connections

	Item			
	M2 250B		M2 250F	
Icu (kA)	25		36	
In (A)	3P	4P	3P	4P
100	T723B100	T724B100	T723F100	T724F100
160	T723B160	T724B160	T723F160	T724F160
200	T723B200	T724B200	T723F200	T724F200
250	T723B250	T724B250	T723F250	T724F250

M2 250 - EARTH-LEAKAGE THERMAL MAGNETIC

Thermal-magnetic circuit breakers with integrated earth-leakage module for panel or DIN35 rail installation. Circuit breaker and contact status display. Can be equipped with auxiliary and alarm contacts, shunt trips, multi-voltage motor control and mechanical interlock.

Supplied with circuit breakers:
- Phase insulators and bar or lug connections

	Item		
	M2 250B		M2 250F
Icu (kA)	25		36
In (A)	3P+N/2		3P+N/2
100	T724B100D		T724F100D
160	T724B160D		T724F160D
200	T724B200D		T724F200D
250	T724B250D		T724F250D

M2 250B/F
electronic

T724...E

T724...D
T724...ED

M2 250- ELECTRONIC

Electronic circuit breakers for installation on DIN 35 rail. Circuit breaker and contact status display. Can be equipped with auxiliary and alarm contacts, shunt trips, multi-voltage motor control and mechanical interlock.

Supplied with circuit breakers:
- Phase insulators and bar or lug connections

	Item			
	M2 250B		M2 250F	
Icu (kA)	25		36	
In (A)	3P	4P	3P	4P
40	T723B40E	T724B40E	T723F40E	T724F40E
100	T723B100E	T724B100E	T723F100E	T724F100E
160	T723B160E	T724B160E	T723F160E	T724F160E
250	T723B250E	T724B250E	T723F250E	T724F250E

M2 250 - EARTH-LEAKAGE ELECTRONIC

Electronic circuit breakers with integrated earth-leakage module for panel or DIN35 installation. Circuit breaker and contact status display. Can be equipped with auxiliary and alarm contacts, shunt trips, multi-voltage motor control and mechanical interlock.

Supplied with circuit breakers:
- Phase insulators and bar or lug connections

	Item		
	M2 250B		M2 250F
Icu (kA)	25		36
In (A)	4P		4P
40	T724B40ED		T724F40ED
100	T724B100ED		T724F100ED
160	T724B160ED		T724F160ED
250	T724B250ED		T724F250ED

M2 250B/F

electronic

T724...T
T724...M
T724...MT

T724...MD

M2 250 - ELECTRONIC WITH PROTECTION AGAINST EARTH FAULT

Electronic circuit breakers with earth fault protection for panel or DIN35 rail installation. Circuit breaker and contact status display. Can be equipped with auxiliary and alarm contacts, shunt trips, multi-voltage motor control and mechanical interlock.

Supplied with circuit breakers:
- Phase insulators and bar or lug connections

	Item			
	M2 250B		M2 250F	
Icu (kA)	25		36	
In (A)	3P	4P	3P	4P
40	T723B40T	T724B40T	T723F40T	T724F40T
100	T723B100T	T724B100T	T723F100T	T724F100T
160	T723B160T	T724B160T	T723F160T	T724F160T
250	T723B250T	T724B250T	T723F250T	T724F250T

M2 250 - ELECTRONIC WITH MEASUREMENT FUNCTIONS

Electronic circuit breakers with measuring functions for panel or DIN35 rail installation. Circuit breaker and contact status display. Can be equipped with auxiliary and alarm contacts, shunt trips, multi-voltage motor control and mechanical interlock.

Supplied with circuit breakers:
- Phase insulators and bar or lug connections

	Item			
	M2 250B		M2 250F	
Icu (kA)	25		36	
In (A)	3P	3P+N	3P	3P+N
40	T723B40M	T724B40M	T723F40M	T724F40M
100	T723B100M	T724B100M	T723F100M	T724F100M
160	T723B160M	T724B160M	T723F160M	T724F160M
250	T723B250M	T724B250M	T723F250M	T724F250M

M2 250 - ELECTRONIC WITH PROTECTION AGAINST EARTH FAULT AND INTEGRATED MEASUREMENT

Electronic circuit breakers with earth fault protection and integrated measuring functions for panel or DIN35 rail installation. Circuit breaker and contact status display. Can be equipped with auxiliary and alarm contacts, shunt trips, multi-voltage motor control and mechanical interlock.

Supplied with circuit breakers:
- Phase insulators and bar or lug connections

	Item			
	M2 250B		M2 250F	
Icu (kA)	25		36	
In (A)	3P	4P	3P	4P
40	T723B40MT	T724B40MT	T723F40MT	T724F40MT
100	T723B100MT	T724B100MT	T723F100MT	T724F100MT
160	T723B160MT	T724B160MT	T723F160MT	T724F160MT
250	T723B250MT	T724B250MT	T723F250MT	T724F250MT

M2 250 - EARTH-LEAKAGE ELECTRONIC AND INTEGRATED MEASUREMENT

Electronic circuit breakers with earth-leakage module and integrated measuring functions for panel or DIN35 rail installation . Circuit breaker and contact status display. Can be equipped with auxiliary and alarm contacts, shunt trips, multi-voltage motor control and mechanical interlock.

Supplied with circuit breakers:
- Phase insulators and bar or lug connections

	Item	
	M2 250B	M2 250F
Icu (kA)	25	36
In (A)	4P	4P
40	T724B40MD	T724F40MD
100	T724B100MD	T724F100MD
160	T724B160MD	T724F160MD
250	T724B250MD	T724F250MD

M2 250B/F

contacts and shunt trips

M7X01

Item	AUXILIARY AND ALARM CONTACTS	
M7X01	1NO/NC 6A/230 Vac	Max. No. of contacts that can be installed 2 (1 AUX + 1 AL) reference standard: CEI EN 60947-5-1 category of use: AC12 switching time for opening: 6.5 ms switching time for closing: 10 ms switching time for tripping: 1 ms

M7S...

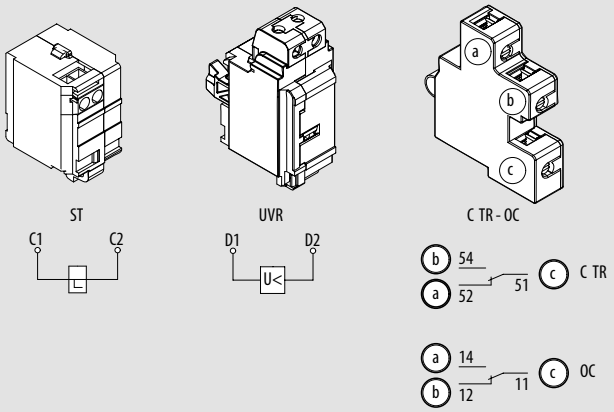
Item	CURRENT RELEASE SHUNT TRIPS (ST)	
M7S012	12 Vac / dc	reference standard: IEC 23-105 operating voltage: 70 to 110 % Vn circuit breaker opening time: < 50 ms absorbed power: 400 VA/W
M7S024	24 Vac / dc	
M7S048	48 Vac / dc	
M7S110	100 to 130 Vac	
M7S230	200 to 277 Vac	
M7S415	380 to 480 Vac	

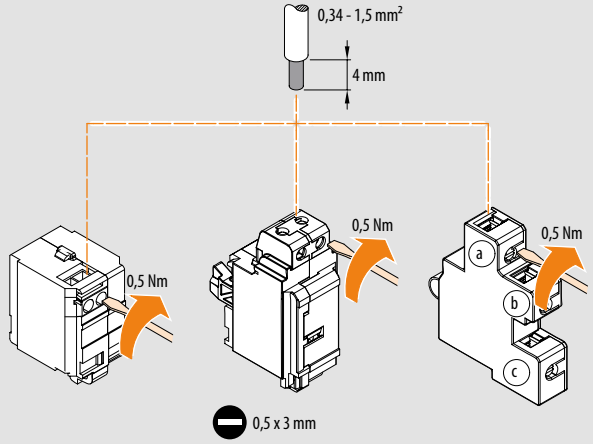
M7U...

Item	MINIMUM VOLTAGE SHUNT TRIPS (UVR)	
M7U012	12 Vac / dc	reference standard: IEC 23-105 tripping voltage: 35 to 70 %Vn reset voltage: 85 to 110 %Vn circuit breaker opening time: < 50 ms absorbed power: 4 VA
M7U024	24 Vac / dc	
M7U048	48 Vac / dc	
M7U110	110-130 Vac /dc	
M7U230	200 to 240 Vac	
M7U277	277 Vac	
M7U415	380 to 415 Vac	
M7U480	440 to 480 Vac	

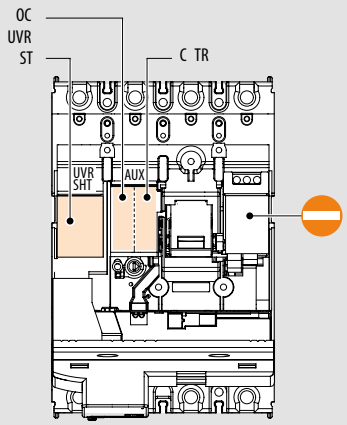
	EMERGENCY AND TIME-DELAY MODULES	
M7000E/024	24 Vac / dc	emergency modules for minimum voltage shunt trips M7UEM
M7000MR/230	230 Vac	time-delay modules for minimum voltage shunt trips M7UEM. They introduce a tripping delay of 800 ms to prevent untimely opening of the circuit breakers.
M7000MR/400	400 Vac	
M7UEM		shunt trip for modules M7000... For MEGATIKER M1, M2 and M3

SHUNT TRIP AND CONTACT CONNECTIONS





SHUNT TRIP AND CONTACT HOUSING



MAX. NO. OF ACCESSORIES THAT CAN BE INSTALLED

	3P		4P			4P+earth leakage	
OC	1	1	1	1	1	1	1
CTR	1	1	1	1	1	1	1
EC TR (Default)	0	0	0	0	0	1	1
ST	1	0	2 max	1	0	1	0
UVR	0	1	0	1	1 max	0	1

CONTACT OUTPUT

V	Resistive/Inductive (A)
24 Vdc	10/5
48 Vdc	1.3/0.7
110 Vdc	0.4/0.3
230 Vdc	0.3/0.2
110 Vac	10/4
230 Vac	6/2

TECHNICAL DATA OF THE ST SHUNT TRIPS

Vn	Peak current (A)	Coil resistance (Ω)
12 Vac / dc	15	0.78
24 Vac / dc	7.5	3.2
48 Vac / dc	5.5	8.1
100 to 130 Vac	2.5	35.4
200 to 277 Vac	1.5	146.5
380 to 480 Vac	0.9	427.3

M2 250B/F

motor controls

M7M01

Item	MULTI-VOLTAGE SIDE MOTOR CONTROLS
M7M01	Type of motor: direct Installation: side Rated voltage: 24 to 230 Vac/dc multi-voltage Opening time: ≤ 90 ms Closing time: ≤ 100 ms Mechanical durability (manoeuvres): 8000 Peak absorbed power: 40 W Maintenance absorbed power: 4 W Maximum frequency of use: 4 manoeuvres/minute

M7M07

M7M14

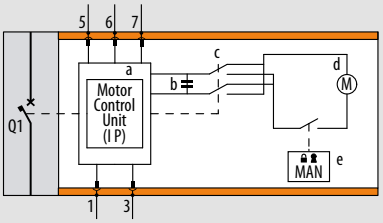
M7M09

Item	ACCESSORIES FOR SIDE MOTOR CONTROLS
M7M17	selector with motor padlock locking system (max. 3 padlocks with diameters between 4 and 8 mm)
M7M14	Ronis key lock
M7M15	Profalux key lock
M7M09	plate for installation on DIN35 rail with side motor controls

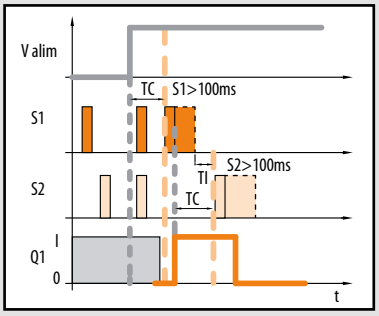
CHARGE TIMES

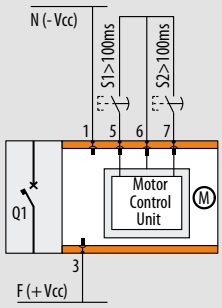
Vn (Vac/dc)	Charge (s)		Inversion (ms)	Manoeuvre (ms)
	ac. (s)	dc (s)	ac/dc	ac/dc
24	2.3	1.6	3	80
48	0.9	0.85	3	80
110	0.6	0.6	3	80
230	0.5	0.5	3	80

WIRING DIAGRAMS

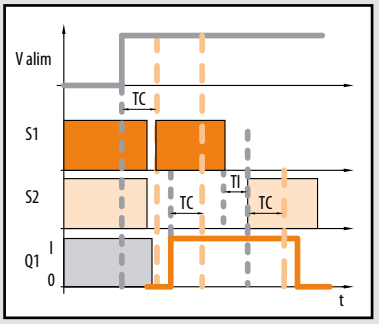


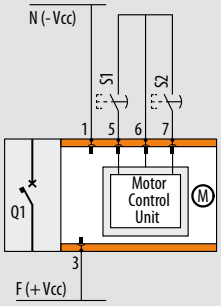
Permanent power supply pulse control





Permanent power supply held control





M2 250B/F

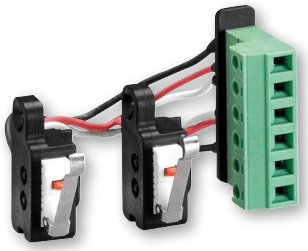
rotary handles

M7R01

M7R05

Item	DIRECT AND VARY-DEPTH ROTARY HANDLES
M7R01	Direct rotary handle for circuit breakers without earth-leakage protection
M7R02	Direct rotary handle for circuit breakers with earth-leakage protection
M7R03	Emergency direct rotary handle for circuit breakers without earth-leakage protection
M7R04	Emergency direct rotary handle for circuit breakers with earth-leakage protection
M7R05	Vary-depth rotary handle (for all versions)
M7R06	Emergency vary-depth rotary handle (for all versions)

M7R07

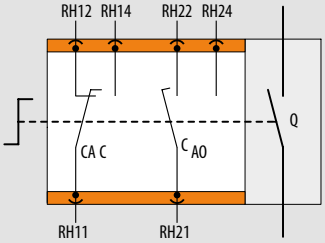


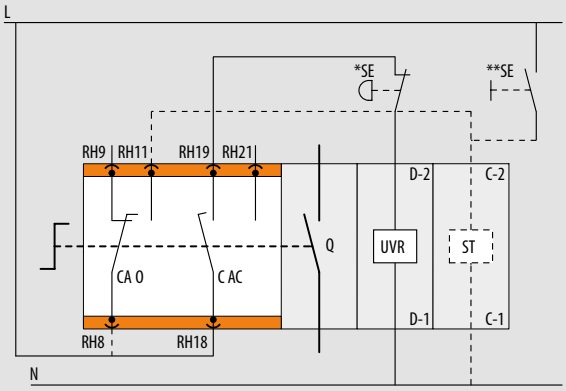
M7R13

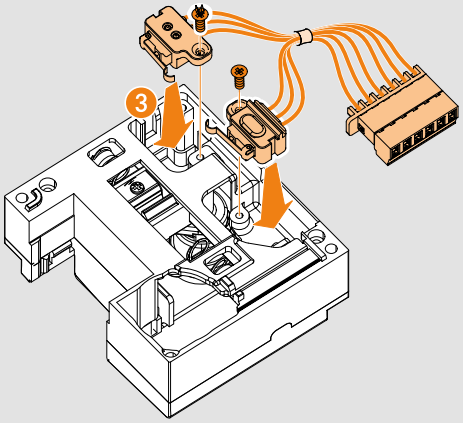
Item	ACCESSORIES AND KEY LOCKS FOR ROTARY HANDLES
M7R13	Pair of advanced auxiliary contacts 1NO+1NC
M7R07	RONIS key lock for direct rotary handles
M7R08	PROFALUX key lock for direct rotary handles
M7R07A	RONIS key lock for direct rotary handles EL43525 map
M7R10	RONIS key lock for vary-depth rotary handles
M7R11	PROFALUX key lock for vary-depth rotary handles

DIAGRAMS

Auxiliary contact item M7R13







M2 250B/F

connection accessories

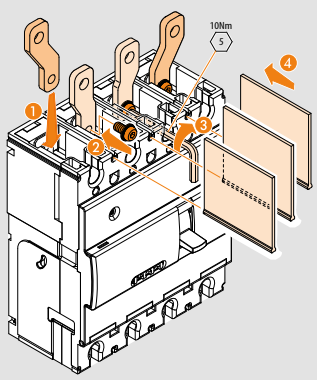
M7A04

Item	FRONT TERMINALS
M7A03	Offset long front terminals for 3P circuit breakers
M7A04	Offset long front terminals for 4P circuit breakers

M7X18

M7X19

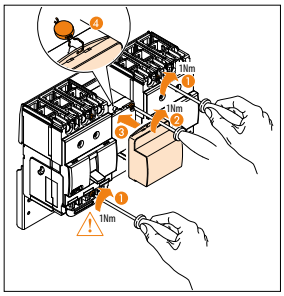
Item	CLAMPS FOR ALUMINIUM AND COPPER CABLES	
M7X08	Screw and nut lug drawer for 3P circuit breakers	
M7X18	Screw and nut lug drawer for 4P circuit breakers	
M7X09	Clamps for 3P circuit breakers	Flexible cable: 1x120 mm^2
M7X19	Clamps for 4P circuit breakers	Rigid cable: 1x150 mm^2 Busbar: 28.5x28.5x8.5mm



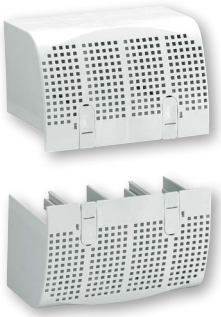
M2 250B/F

interlock, protection covers and various accessories

M7X13



Item	MECHANICAL INTERLOCK
M7X03	interlock for fixed version



M7C08

	CLAMP PROTECTION COVERS
M7C07	Clamp protection cover for 3P circuit breakers
M7C08	Clamp protection cover for 4P circuit breakers
M7C10	Lowered clamp protection cover for 4P circuit breakers with TIFAST system

M7X04

M7X23

Item	VARIOUS INSTALLATION ACCESSORIES AND SPARE PARTS
M7X02	Handle padlock locking system (OFF) (max. number of padlocks 3 with diameter 4-8 mm)
M7X04	Insulating shields between the phases (12 bags of 3 insulators each)
M7X06	Plate for circuit breakers on DIN35 rail
M7X16	Plate for circuit breakers with integrated earth-leakage module on DIN35 rail
M7A10	Installation plate for circuit breakers with rear terminals in non-MAS structures
M7ALIM	Power supply with 24 Vac/dc input for MEGATIKER M2, M4, M5 (2 DIN modules)
M7COM	MODBUS RS485 communication and supply interface (24 Vdc - 1 DIN module)
M7X12	Kit of 12 fixing screws for M1 160 and M2 250 circuit breakers
M7X22	Cables for auxiliary power supply for M2 250 (20 pcs)
M7X23	Generic seal kit

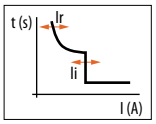
M3 125F/N/H/L

thermal magnetic and earth-leakage thermal magnetic

T7303...

T7304...

T7304...D



M3 125 THERMAL MAGNETIC

Thermal-magnetic circuit breakers for panel installation Circuit breaker and contact status display. Can be equipped with auxiliary and alarm contacts, shunt trips, multi-voltage motor control and mechanical interlock.

Supplied with circuit breakers:
- Phase insulators and bar or lug connections

	Item			
	M3 125F		M3 125N	
Icu (kA)	36		50	
In (A)	3P	4P	3P	4P
16	T7303F16	T7304F16	T7303N16	T7304N16
20	T7303F20	T7304F20	T7303N20	T7304N20
25	T7303F25	T7304F25	T7303N25	T7304N25
32	T7303F32	T7304F32	T7303N32	T7304N32
40	T7303F40	T7304F40	T7303N40	T7304N40
50	T7303F50	T7304F50	T7303N50	T7304N50
63	T7303F63	T7304F63	T7303N63	T7304N63
80	T7303F80	T7304F80	T7303N80	T7304N80
100	T7303F100	T7304F100	T7303N100	T7304N100
125	T7303F125	T7304F125	T7303N125	T7304N125

M3 125 THERMAL MAGNETIC

Thermal-magnetic circuit breakers for panel installation Circuit breaker and contact status display. Can be equipped with auxiliary and alarm contacts, shunt trips, multi-voltage motor control and mechanical interlock.

Supplied with circuit breakers:
- Phase insulators and bar or lug connections

	Item			
	M3 125H		M3 125L	
Icu (kA)	70		100	
In (A)	3P	4P	3P	4P
16	T7303H16	T7304H16	T7303L16	T7304L16
20	T7303H20	T7304H20	T7303L20	T7304L20
25	T7303H25	T7304H25	T7303L25	T7304L25
32	T7303H32	T7304H32	T7303L32	T7304L32
40	T7303H40	T7304H40	T7303L40	T7304L40
50	T7303H50	T7304H50	T7303L50	T7304L50
63	T7303H63	T7304H63	T7303L63	T7304L63
80	T7303H80	T7304H80	T7303L80	T7304L80
100	T7303H100	T7304H100	T7303L100	T7304L100
125	T7303H125	T7304H125	T7303L125	T7304L125

M3 125 EARTH-LEAKAGE THERMAL MAGNETIC

Thermal-magnetic circuit breakers with integrated earth-leakage protection for panel installation Circuit breaker and contact status display. Can be equipped with auxiliary and alarm contacts, shunt trips, multi-voltage motor control and mechanical interlock.

Supplied with circuit breakers:
- Phase isolators and bar and lug connections

	Item	
	M3 125F	M3 125N
Icu (kA)	36	50
In (A)	4P	4P
16	T7304F16D	T7304N16D
20	T7304F20D	T7304N20D
25	T7304F25D	T7304N25D
32	T7304F32D	T7304N32D
40	T7304F40D	T7304N40D
50	T7304F50D	T7304N50D
63	T7304F63D	T7304N63D
80	T7304F80D	T7304N80D
100	T7304F100D	T7304N100D
125	T7304F125D	T7304N125D

M3 125F/N/H/L

contacts and shunt trips

M7X01

Item	AUXILIARY AND ALARM CONTACTS	
M7X01	1NO/NC 6A/230 Vac	Max. No. of contacts that can be installed 2 (1 AUX + 1 AL) reference standard: CEI EN 60947-5-1 category of use: AC12 switching time for opening: 6.5 ms switching time for closing: 5 ms switching time for tripping: 1 ms

M7S...

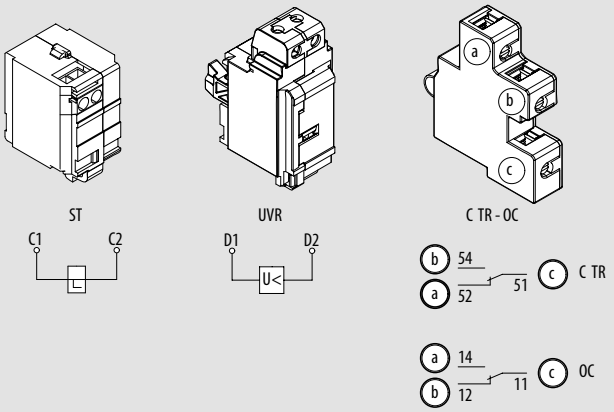
Item	CURRENT RELEASE SHUNT TRIPS (ST)	
M7S012	12 Vac / dc	reference standard: IEC 23-105 operating voltage: 70 to 110 % Vn circuit breaker opening time: < 50 ms absorbed power: 400 VA/W
M7S024	24 Vac / dc	
M7S048	48 Vac / dc	
M7S110	100 to 130 Vac	
M7S230	200 to 277 Vac	
M7S415	380 to 480 Vac	

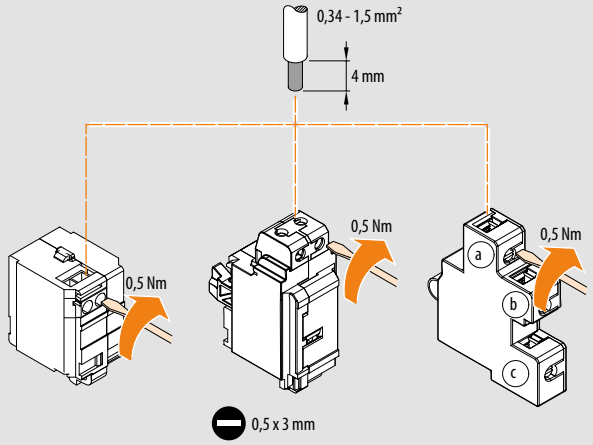
M7U...

Item	MINIMUM VOLTAGE SHUNT TRIPS (UVR)	
M7U012	12 Vac / dc	reference standard: IEC 23-105 tripping voltage: 35 to 70 % Vn reset voltage: 85 to 110 % Vn circuit breaker opening time: < 50 ms absorbed power: 4 VA
M7U024	24 Vac / dc	
M7U048	48 Vac / dc	
M7U110	110-130 Vac /dc	
M7U230	200 to 240 Vac	
M7U277	277 Vac	
M7U415	380 to 415 Vac	
M7U480	440 to 480 Vac	

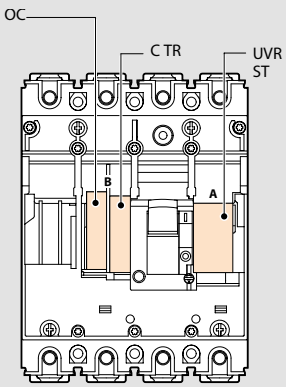
	EMERGENCY AND TIME-DELAY MODULES	
M7000E/024	24 Vac / dc	emergency modules for minimum voltage shunt trips M7UEM
M7000MR/230	230 Vac	time-delay modules for minimum voltage shunt trips M7UEM. They introduce a tripping delay of 800 ms to prevent untimely opening of the circuit breakers.
M7000MR/400	400 Vac	
M7UEM		shunt trip for modules M7000... For MEGATIKER M1, M2 and M3

SHUNT TRIP AND CONTACT CONNECTIONS





SHUNT TRIP AND CONTACT HOUSING



MAX. NO. OF ACCESSORIES THAT CAN BE INSTALLED

	3P		4P			4P+earth leakage	
OC	1	1	1	1	1	1	1
CTR	1	1	1	1	1	1	1
EC TR (Default)	0	0	0	0	0	1	1
ST	1	0	2 max	1	0	1	0
UVR	0	1	0	1	1 max	0	1

CONTACT OUTPUT

V	Resistive/Inductive (A)
24 Vdc	10/5
48 Vdc	1.3/0.7
110 Vdc	0.4/0.3
230 Vdc	0.3/0.2
110 Vac	10/4
230 Vac	6/2

TECHNICAL DATA OF THE ST SHUNT TRIPS

Vn	Peak current (A)	Coil resistance (Ω)
12 Vac / dc	15	0.78
24 Vac / dc	7.5	3.2
48 Vac / dc	5.5	8.1
100 to 130 Vac	2.5	35.4
200 to 277 Vac	1.5	146.5
380 to 480 Vac	0.9	427.3

M7R20

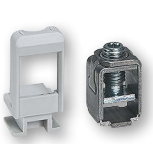
Item	DIRECT AND VARY-DEPTH ROTARY HANDLES
M7R20	STANDARD direct rotary handle
M7R22	STANDARD vary-depth rotary handle
M7R21	EMERGENCY direct rotary handle
M7R23	EMERGENCY vary-depth rotary handle

	ACCESSORIES AND KEY LOCKS FOR ROTARY HANDLES
M7R31	Key lock for vary-depth rotary handles (support)
M7K01	Universal flat key for all supports
M7K02	EL43525 (MAP A) universal key for all supports
M7K03	EL43363 (MAP B) universal key for all supports
M7K04	Universal cross key for all supports
M7R32	Pair of advanced auxiliary contacts 1NO+1NC for rotary handle

M7A50

M7A55

Item	FRONT AND REAR TERMINALS
M7A50	Offset long front terminals for 3P circuit breakers
M7A51	Offset long front terminals for 4P circuit breakers
M7A54	Flat offset rear terminals for 3P circuit breakers
M7A55	Flat offset rear terminals for 4P circuit breakers



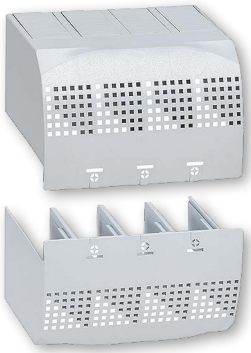
M7X50

M7X53

Item	COPPER AND ALUMINIUM CABLE CLAMPS	
M7X50	Clamps for 3P circuit breakers	Flexible cable: 1x50mm² (Cu/Al)
M7X51	Clamps for 4P circuit breakers	Rigid cable: 1x50mm² (Cu/Al)
M7X52	High capacity clamps for 3P circuit breakers	Flexible cable: 1x70mm² (Cu) - 1x95mm² (Al)
M7X53	High capacity clamps for 4P circuit breakers	Rigid cable: 1x70mm² (Cu) - 1x95mm² (Al)

M7I04 + M7I01

Item	MECHANICAL INTERLOCKS
M7I04	Interlock plate for fixed version
M7I01	Mechanical interlock for fixed circuit breakers
M7I02	Interlock with additional auxiliary contacts for fixed circuit breakers



M7C21

Item	CLAMP PROTECTION COVERS
M7C20	Clamp protection cover for 3P circuit breakers
M7C21	Clamp protection cover for 4P circuit breakers

M7F02

Item	VARIOUS INSTALLATION ACCESSORIES
M7F01	Insulating shields between the phases (3P)
M7F02	Insulating shields between the phases (4P)
M7X02	Open position handle padlock

	PLATES AND PANELS FOR M3 125
9063P	Plate M3 125, Horizontal, FIXED, without accessories
9064P	Plate M3 125, Vertical, FIXED, without accessories
9063	Panel M3 125, Vertical, FIXED, without accessories
9064	Panel M3 125, Horizontal, FIXED, without accessories

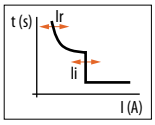
M3 160F/N/H/L

thermal magnetic and earth-leakage thermal magnetic

T7303...

T7304...

T7304...D



M3 160 THERMAL MAGNETIC

Thermal-magnetic circuit breakers for panel installation Circuit breaker and contact status display. Can be equipped with auxiliary and alarm contacts, shunt trips, multi-voltage motor control and mechanical interlock.

Supplied with circuit breakers:
- Phase insulators and bar or lug connections

	Item			
	M3 160F		**M3 160N**	
Icu (kA)	36		50	
In (A)	3P	4P	3P	4P
160	**T7303F160**	**T7304F160**	**T7303N160**	**T7304N160**

M3 160 THERMAL MAGNETIC

Thermal-magnetic circuit breakers for panel installation Circuit breaker and contact status display. Can be equipped with auxiliary and alarm contacts, shunt trips, multi-voltage motor control and mechanical interlock.

Supplied with circuit breakers:
- Phase insulators and bar or lug connections

	Item			
	M3 160H		**M3 160L**	
Icu (kA)	70		100	
In (A)	3P	4P	3P	4P
160	**T7303H160**	**T7304H160**	**T7303L160**	**T7304L160**

M3 160 EARTH-LEAKAGE THERMAL MAGNETIC

Thermal-magnetic circuit breakers with integrated earth-leakage protection for panel installation Circuit breaker and contact status display. Can be equipped with auxiliary and alarm contacts, shunt trips, multi-voltage motor control and mechanical interlock.

Supplied with circuit breakers:
- Phase isolators and bar and lug connections

	Item	
	M3 160F	**M3 160N**
Icu (kA)	36	50
IH (A)	4P	4P
160	**T7304F160D**	**T7304N160D**

M3 160F/N/H/L

contacts and shunt trips

M7X01

Item	AUXILIARY AND ALARM CONTACTS	
M7X01	1NO/NC 6A/230 Vac	Max. No. of contacts that can be installed 2 (1 AUX + 1 AL) reference standard: CEI EN 60947-5-1 category of use: AC12 switching time for opening: 6.5 ms switching time for closing: 5 ms switching time for tripping: 1 ms

M7S...

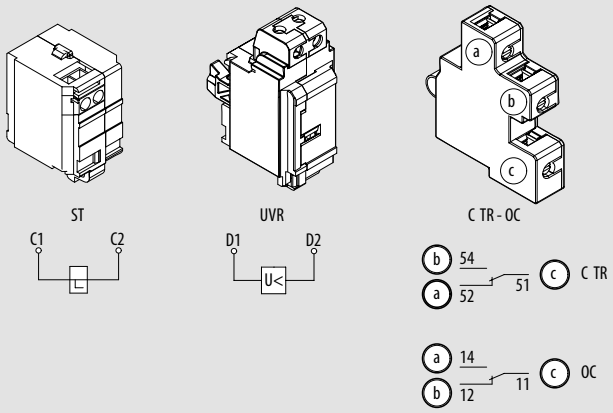
Item	CURRENT RELEASE SHUNT TRIPS (ST)	
M7S012	12 Vac / dc	reference standard: IEC 23-105 operating voltage: 70 to 110 % Vn circuit breaker opening time: < 50 ms absorbed power: 400 VA/W
M7S024	24 Vac / dc	
M7S048	48 Vac / dc	
M7S110	100 to 130 Vac	
M7S230	200 to 277 Vac	
M7S415	380 to 480 Vac	

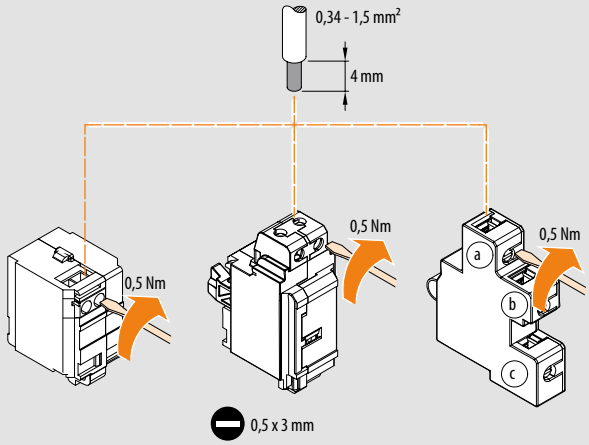
M7U...

Item	MINIMUM VOLTAGE SHUNT TRIPS (UVR)	
M7U012	12 Vac / dc	reference standard: IEC 23-105 tripping voltage: 35 to 70 % Vn reset voltage: 85 to 110 % Vn circuit breaker opening time: < 50 ms absorbed power: 4 VA
M7U024	24 Vac / dc	
M7U048	48 Vac / dc	
M7U110	110-130 Vac /dc	
M7U230	200 to 240 Vac	
M7U277	277 Vac	
M7U415	380 to 415 Vac	
M7U480	440 to 480 Vac	

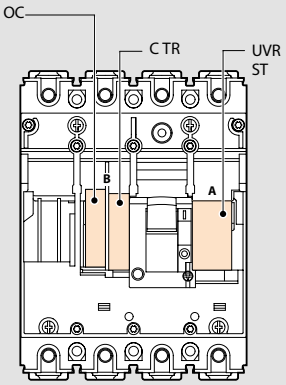
	EMERGENCY AND TIME-DELAY MODULES	
M7000E/024	24 Vac / dc	emergency modules for minimum voltage shunt trips M7UEM
M7000MR/230	230 Vac	time-delay modules for minimum voltage shunt trips M7UEM. They introduce a tripping delay of 800 ms to prevent untimely opening of the circuit breakers.
M7000MR/400	400 Vac	
M7UEM		shunt trip for modules M7000... For MEGATIKER M1, M2 and M3

SHUNT TRIP AND CONTACT CONNECTIONS





SHUNT TRIP AND CONTACT HOUSING



MAX. NO. OF ACCESSORIES THAT CAN BE INSTALLED

	3P		4P			4P+earth leakage	
OC	1	1	1	1	1	1	1
CTR	1	1	1	1	1	1	1
EC TR (Default)	0	0	0	0	0	1	1
ST	1	0	2 max	1	0	1	0
UVR	0	1	0	1	1 max	0	1

CONTACT OUTPUT

V	Resistive/Inductive (A)
24 Vdc	10/5
48 Vdc	1.3/0.7
110 Vdc	0.4/0.3
230 Vdc	0.3/0.2
110 Vac	10/4
230 Vac	6/2

TECHNICAL DATA OF THE ST SHUNT TRIPS

Vn	Peak current (A)	Coil resistance (Ω)
12 Vac / dc	15	0.78
24 Vac / dc	7.5	3.2
48 Vac / dc	5.5	8.1
100 to 130 Vac	2.5	35.4
200 to 277 Vac	1.5	146.5
380 to 480 Vac	0.9	427.3

M7R20

Item	DIRECT AND VARY-DEPTH ROTARY HANDLES	
M7R20	STANDARD direct rotary handle	
M7R22	STANDARD vary-depth rotary handle	
M7R21	EMERGENCY direct rotary handle	
M7R23	emergency vary-depth rotary handle	

	ACCESSORIES AND KEY LOCKS FOR ROTARY HANDLES
M7R31	Key lock for vary-depth rotary handles (support)
M7K01	Universal flat key for all supports
M7K02	EL43525 (MAP A) universal key for all supports
M7K03	EL43363 (MAP B) universal key for all supports
M7K04	Universal cross key for all supports
M7R32	Pair of advanced auxiliary contacts 1NO+1NC for rotary handle

M7A50

M7A55

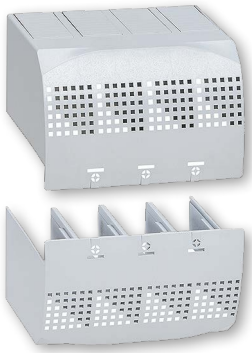
Item	FRONT AND REAR TERMINALS
M7A50	Offset long front terminals for 3P circuit breakers
M7A51	Offset long front terminals for 4P circuit breakers
M7A54	Flat offset rear terminals for 3P circuit breakers
M7A55	Flat offset rear terminals for 4P circuit breakers

M7X53

Item	COPPER AND ALUMINIUM CABLE CLAMPS	
M7X52	High capacity clamps for 3P circuit breakers	Flexible cable: 1x70mm^2 (Cu) - 1x95mm^2 (Al)
M7X53	High capacity clamps for 4P circuit breakers	Rigid cable: 1x70mm^2 (Cu) - 1x95mm^2 (Al)

M7I04 + M7I01

Item	MECHANICAL INTERLOCKS
M7I04	Interlock plate for fixed version
M7I01	Mechanical interlock for fixed circuit breakers
M7I02	Interlock with additional auxiliary contacts for fixed circuit breakers



M7C21

Item	CLAMP PROTECTION COVERS
M7C20	Clamp protection cover for 3P circuit breakers
M7C21	Clamp protection cover for 4P circuit breakers

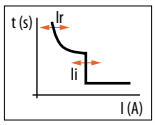
M7F02

Item	VARIOUS INSTALLATION ACCESSORIES
M7F01	Insulating shields between the phases (3P)
M7F02	Insulating shields between the phases (4P)
M7X02	Open position handle padlock

	PLATES AND PANELS FOR M3 125
9063P	Plate M3 125, Horizontal, FIXED, without accessories
9064P	Plate M3 125, Vertical, FIXED, without accessories
9063	Panel M3 125, Vertical, FIXED, without accessories
9064	Panel M3 125, Horizontal, FIXED, without accessories

T733...

T734...



M3 250 THERMAL MAGNETIC

Thermal-magnetic circuit breakers for panel installation Circuit breaker and contact status display. Can be equipped with auxiliary and alarm contacts, shunt trips, motor control, removable and draw-out versions and mechanical interlock.

Supplied with circuit breakers:
- Phase insulators and bar or lug connections

	Item							
	M3 250F		M3 250N		M3 250H		M3 250L	
Icu (kA)	36		50		70		100	
In (A)	3P	4P	3P	4P	3P	4P	3P	4P
16	T733F16	T734F16	T733N16	T734N16	T733H16	T734H16	T733L16	T734L16
20	T733F20	T734F20	T733N20	T734N20	T733H20	T734H20	T733L20	T734L20
25	T733F25	T734F25	T733N25	T734N25	T733H25	T734H25	T733L25	T734L25
32	T733F32	T734F32	T733N32	T734N32	T733H32	T734H32	T733L32	T734L32
40	T733F40	T734F40	T733N40	T734N40	T733H40	T734H40	T733L40	T734L40
50	T733F50	T734F50	T733N50	T734N50	T733H50	T734H50	T733L50	T734L50
63	T733F63	T734F63	T733N63	T734N63	T733H63	T734H63	T733L63	T734L63
80	T733F80	T734F80	T733N80	T734N80	T733H80	T734H80	T733L80	T734L80
100	T733F100	T734F100	T733N100	T734N100	T733H100	T734H100	T733L100	T734L100
125	T733F125	T734F125	T733N125	T734N125	T733H125	T734H125	T733L125	T734L125
160	T733F160	T734F160	T733N160	T734N160	T733H160	T734H160	T733L160	T734L160
200	T733F200	T734F200	T733N200	T734N200	T733H200	T734H200	T733L200	T734L200
250	T733F250	T734F250	T733N250	T734N250	T733H250	T734H250	T733L250	T734L250

M3 250 - EARTH-LEAKAGE THERMAL MAGNETIC

Thermal-magnetic circuit breakers with integrated earth-leakage protection for panel installation Circuit breaker and contact status display. Can be equipped with auxiliary and alarm contacts, shunt trips, motor control, removable and draw-out versions and mechanical interlock.

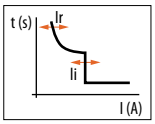
Supplied with circuit breakers:
- Phase insulators and bar or lug connections

T734...D

	Item	
	M3 250F	M3 250N
Icu (kA)	36	50
In (A)	4P	4P
16	T734F16D	T734N16D
20	T734F20D	T734N20D
25	T734F25D	T734N25D
32	T734F32D	T734N32D
40	T734F40D	T734N40D
50	T734F50D	T734N50D
63	T734F63D	T734N63D
80	T734F80D	T734N80D
100	T734F100D	T734N100D
125	T734F125D	T734N125D
160	T734F160D	T734N160D
200	T734F200D	T734N200D
250	T734F250D	T734N250D

M3 250F/N/H/L

electronic and electronic with integrated earth-leakage



T734...EB

M3 250 - ELECTRONIC

Electronic circuit breakers for panel installation Circuit breaker and contact status display. Can be equipped with auxiliary and alarm contacts, shunt trips, motor control, removable and draw-out versions and mechanical interlock.

Supplied with circuit breakers:
- Phase insulators and bar or lug connections

	Item							
	M3 250F		**M3 250N**		**M3 250H**		**M3 250L**	
Icu (kA)	36		50		70		100	
In (A)	3P	4P	3P	4P	3P	4P	3P	4P
40	**T733F40EB**	**T734F40EB**	**T733N40EB**	**T734N40EB**	**T733H40EB**	**T734H40EB**	**T733L40EB**	**T734L40EB**
100	**T733F100EB**	**T734F100EB**	**T733N100EB**	**T734N100EB**	**T733H100EB**	**T734H100EB**	**T733L100EB**	**T734L100EB**
160	**T733F160EB**	**T734F160EB**	**T733N160EB**	**T734N160EB**	**T733H160EB**	**T734H160EB**	**T733L160EB**	**T734L160EB**
250	**T733F250EB**	**T734F250EB**	**T733N250EB**	**T734N250EB**	**T733H250EB**	**T734H250EB**	**T733L250EB**	**T734L250EB**

M3 250 - EARTH-LEAKAGE ELECTRONIC

Electronic circuit breakers with integrated earth-leakage module for panel installation. Circuit breaker and contact status display. Can be equipped with auxiliary and alarm contacts, shunt trips, motor control, removable and draw-out versions and mechanical interlock.

Supplied with circuit breakers:
- Phase insulators and bar or lug connections

T734...EB

	Item	
	M3 250F	**M3 250N**
Icu (kA)	36	50
In (A)	4P	4P
40	**T734F40EBD**	**T734N40EBD**
100	**T734F100EBD**	**T734N100EBD**
160	**T734F160EBD**	**T734N160EBD**
250	**T734F250EBD**	**T734N250EBD**

M3 250F/N/H/L

contacts and shunt trips

M7X01

Item	AUXILIARY AND ALARM CONTACTS	
M7X01	1NO/NC 6A/230 Vac	Max. No. of contacts that can be installed 2 (1 AUX + 1 AL) reference standard: CEI EN 60947-5-1 category of use: AC12 switching time for opening: 6.5 ms switching time for closing: 5 ms switching time for tripping: 1 ms

M7S...

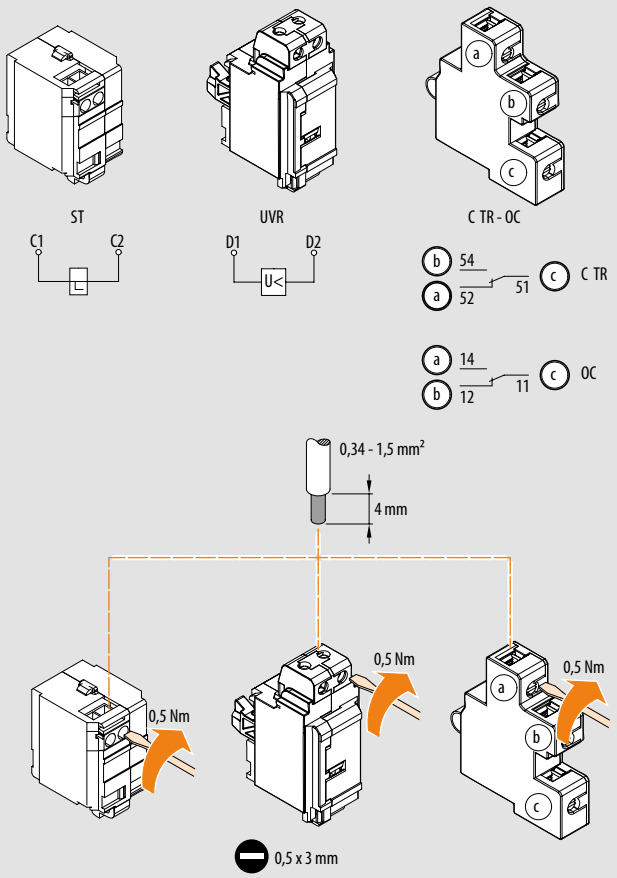
Item	CURRENT RELEASE SHUNT TRIPS (ST)	
M7S012	12 Vac / dc	reference standard: IEC 23-105 operating voltage: 70 to 110 % Vn circuit breaker opening time: < 50 ms absorbed power: 400 VA/W
M7S024	24 Vac / dc	
M7S048	48 Vac / dc	
M7S110	100 to 130 Vac	
M7S230	200 to 277 Vac	
M7S415	380 to 480 Vac	

M7U...

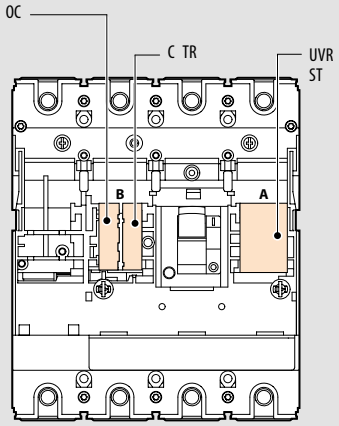
Item	MINIMUM VOLTAGE SHUNT TRIPS (UVR)	
M7U012	12 Vac / dc	reference standard: IEC 23-105 tripping voltage: 35 to 70 % Vn reset voltage: 85 to 110 % Vn circuit breaker opening time: < 50 ms absorbed power: 4 VA
M7U024	24 Vac / dc	
M7U048	48 Vac / dc	
M7U110	110-130 Vac /dc	
M7U230	200 to 240 Vac	
M7U277	277 Vac	
M7U415	380 to 415 Vac	
M7U480	440 to 480 Vac	

	EMERGENCY AND TIME-DELAY MODULES	
M7000E/024	24 Vac / dc	emergency modules for minimum voltage shunt trips M7UEM
M7000MR/230	230 Vac	time-delay modules for minimum voltage shunt trips M7UEM. They introduce a tripping delay of 800 ms to prevent untimely opening of the circuit breakers.
M7000MR/400	400 Vac	
M7UEM		shunt trip for modules M7000... For MEGATIKER M1, M2 and M3

SHUNT TRIP AND CONTACT CONNECTIONS



SHUNT TRIP AND CONTACT HOUSING



MAX. NO. OF ACCESSORIES THAT CAN BE INSTALLED

	3P		4P			4P+earth leakage	
OC	1	1	1	1	1	1	1
CTR	1	1	1	1	1	1	1
EC TR (Default)	0	0	0	0	0	1	1
ST	1	0	2 max	1	0	1	0
UVR	0	1	0	1	1 max	0	1

CONTACT OUTPUT

V	Resistive/Inductive (A)
24 Vdc	10/5
48 Vdc	1.3/0.7
110 Vdc	0.4/0.3
230 Vdc	0.3/0.2
110 Vac	10/4
230 Vac	6/2

TECHNICAL DATA OF THE ST SHUNT TRIPS

Vn	Peak current (A)	Coil resistance (Ω)
12 Vac / dc	15	0.78
24 Vac / dc	7.5	3.2
48 Vac / dc	5.5	8.1
100 to 130 Vac	2.5	35.4
200 to 277 Vac	1.5	146.5
380 to 480 Vac	0.9	427.3

M3 250F/N/H/L

motor controls and rotary handles

M7M024

Item	SPRING CHARGING MOTOR CONTROLS	
M7M024	24 Vac / dc	- type: charging - installation: front - rated voltage: 24-230 Vac /dc - opening and reset time (s): 2 - closing time (ms): ≤ 100 - mechanical durability (manoeuvres): 10000 - peak absorbed power (W/VA): 300
M7M048	48 Vac / dc	
M7M110	110 Vac	
M7M230	110 and 230 Vac	

Item	KEY LOCKS FOR MOTOR CONTROLS
M7M60	Key lock (support)
M7M61	Padlock lock for motor controls
M7K01	Universal flat key for all supports
M7K02	EL43525 (MAP A) universal key for all supports
M7K03	EL43363 (MAP B) universal key for all supports
M7K04	Universal cross key for all supports

M7R20

Item	DIRECT AND VARY-DEPTH ROTARY HANDLES
M7R24	STANDARD direct rotary handle
M7R26	STANDARD vary-depth rotary handle
M7R25	EMERGENCY direct rotary handle
M7R27	emergency vary-depth rotary handle

	ACCESSORIES AND KEY LOCKS FOR ROTARY HANDLES
M7R32	Pair of advanced auxiliary contacts 1NO+1NC
M7R30	Key lock for direct rotary handles (support)
M7R31	Key lock for vary-depth rotary handles (support)
M7K01	Universal flat key for support M7R31
M7K02	EL43525 (MAP A) universal key for support M7R31
M7K03	EL43363 (MAP B) universal key for support M7R31
M7K04	Universal cross key for support M7R31

M3 250F/N/H/L

connection accessories

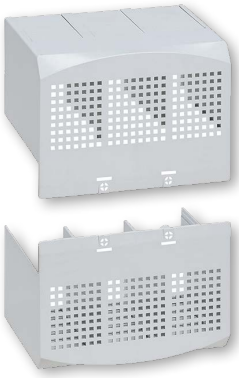
M7A52

M7A57

Item	FRONT AND REAR TERMINALS
M7A52	Offset long front terminals for 3P circuit breakers
M7A53	Offset long front terminals for 4P circuit breakers
M7A56	Flat offset rear terminals for 3P circuit breakers
M7A57	Flat offset rear terminals for 4P circuit breakers

M7X54

Item	CLAMPS FOR ALUMINIUM AND COPPER CABLES	
M7X54	Clamps for 3P circuit breakers	Flexible cable: 1x120 mm^2
M7X55	Clamps for 4P circuit breakers	Rigid cable: 1x150 mm^2



M7C22

	CLAMP PROTECTION COVERS
M7C22	Clamp protection cover for 3P circuit breakers
M7C23	Clamp protection cover for 4P circuit breakers

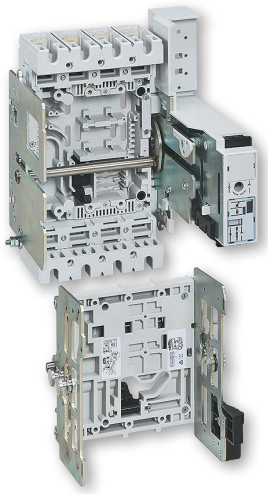
M7F02

	VARIOUS INSTALLATION ACCESSORIES
M7F01	Insulating shields between the phases (3P)
M7F02	Insulating shields between the phases (4P)
M7X02	Open position lever padlock locking system

M3 250F/N/H/L

removable and draw-out version

M7B50



M7B51 + M7B53 + M7B55

M7B52

Item	REMOVABLE BASES
M7B50	Removable base with front terminals for 3P circuit breakers
M7B51	Removable base with front terminals for 4P circuit breakers
	DRAW-OUT VERSION CONVERSION KIT
M7B54	Kit for removable bases for 3P circuit breakers
M7B55	Kit for removable bases for 4P circuit breakers
	MOVING PARTS FOR REMOVABLE AND DRAW-OUT VERSIONS
M7B52	Moving part for 3P circuit breakers
M7B53	Moving part for 4P circuit breakers

M7B63

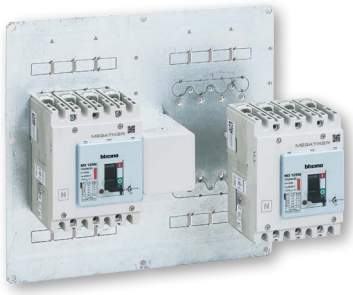
M7B65

M7B60

Item	ACCESSORIES FOR REMOVABLE AND DRAW-OUT VERSION
M7B63	Key lock for draw-out version (support)
M7B64	Key lock for removable version (support)
M7B65	Padlock lock for draw-out version
M7B10	In/out signalling contact for draw-out and removable version
M7B05	Auxiliary contacts for draw-out version (max. 4)
M7B60	Front cover for draw-out version with door closed
M7B61	Front cover plate for draw-out version for motor controls
M7X02	Open position handle padlock
F15/7500P6	Slide connector with 6 contacts (for removable and draw-out version)

M3 250F/N/H/L

mechanical interlock



M7I05

M7I01

Item	MECHANICAL INTERLOCKS
M7I05	Interlock plate for fixed version
M7I03	Interlock rear plate for removable and draw-out version
M7I01	Mechanical interlock for fixed circuit breakers
M7I02	Interlock with additional auxiliary contacts for fixed circuit breakers

	PLATES AND PANELS FOR M3 250
9065P	Plate M3 250, Vertical, FIXED, without accessories
9065PM	Plate M3 250, Vertical, FIXED, with rotary handle or motor control
9065PR	Plate M3 250, Vertical, REMOVABLE AND DRAW-OUT, without accessories or with rotary handle or motor control
9065PI	Plate M3 250, Vertical, FIXED, interlocked
9066P	Plate M3 250, Horizontal, FIXED, without accessories
9066PR	Plate M3 250, Horizontal, REMOVABLE AND DRAW-OUT, without accessories
9065RM	Plate M3 250, Vertical, FIXED AND DRAW-OUT, without accessories or with rotary handle or motor control
9065E	Panel M3 250, Vertical, DRAW-OUT, without accessories or with rotary handle or motor control
9065I	Panel M3 250, Vertical, FIXED, interlocked
9066R	Panel M3 250, Horizontal, FIXED AND DRAW-OUT, without accessories
9066E	Panel M3 250, Horizontal, DRAW-OUT, without accessories

M4 630F/N/L

thermal magnetic

T743...

T744...

M4 630 - THERMAL MAGNETIC

Thermal-magnetic circuit breakers for panel installation Circuit breaker and contact status display. Can be equipped with auxiliary and alarm contacts, shunt trips, motor control, removable and draw-out versions and mechanical interlock. Earth-leakage protection possible by means of underneath earth-leakage module. Adjustment of overload and short-circuit currents.

Supplied with circuit breakers:
- Phase insulators and bar or lug connections

	Item					
	M4 630F		M4 630N		M4 630L	
Icu (kA)	36		50		100	
In (A)	3P	4P	3P	4P	3P	4P
250	T743F250	T744F250	T743N250	T744N250	T743L250	T744L250
320	T743F320	T744F320	T743N320	T744N320	T743L320	T744L320
400	T743F400	T744F400	T743N400	T744N400	T743L400	T744L400
500	T743F500	T744F500	T743N500	T744N500	T743L500	T744L500
630	T743F630	T744F630	T743N630	T744N630	T743L630	T744L630

T7082/400

GL/GS630 - EARTH-LEAKAGE MODULES

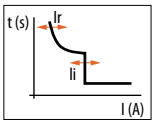
Item			
GS	GL	In (A)	
T7082/400	T7081/400	≤ 400	electronic underneath earth-leakage module with remote earth-leakage module tripping notification
T7092/630	T7091/630	≤ 630	

M4 630F/N/L

electronic with measurement functions

T743...EB

T744...EB



M4 630 - ELECTRONIC

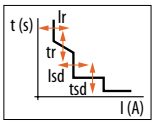
Electronic circuit breakers for panel installation Circuit breaker and contact status display. Can be equipped with auxiliary and alarm contacts, shunt trips, motor control, removable and draw-out versions and mechanical interlock. Earth-leakage protection possible by means of underneath earth-leakage module. Li-type overload and short-circuit current adjustment.

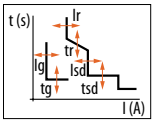
Supplied with circuit breakers:
- Phase insulators and bar or lug connections

	Item					
	M4 630F		**M4 630N**		**M4 630L**	
Icu (kA)	36		50		100	
In (A)	3P	4P	3P	4P	3P	4P
250	**T743F250EB**	**T744F250EB**	**T743N250EB**	**T744N250EB**	**T743L250EB**	**T744L250EB**
320	**T743F320EB**	**T744F320EB**	**T743N320EB**	**T744N320EB**	**T743L320EB**	**T744L320EB**
400	**T743F400EB**	**T744F400EB**	**T743N400EB**	**T744N400EB**	**T743L400EB**	**T744L400EB**
500	**T743F500EB**	**T744F500EB**	**T743N500EB**	**T744N500EB**	**T743L500EB**	**T744L500EB**
630	**T743F630EB**	**T744F630EB**	**T743N630EB**	**T744N630EB**	**T743L630EB**	**T744L630EB**

T743...M

T744...M





M4 630 - ELECTRONIC WITH MEASUREMENT FUNCTIONS

Electronic circuit breakers with integrated measurement functions for panel installation. Circuit breaker and contact status display. Can be equipped with auxiliary and alarm contacts, shunt trips, motor control, removable and draw-out versions and mechanical interlock. Earth-leakage protection possible by means of underneath earth-leakage module. Lsi and Lsig overload and short-circuit current and time adjustment.

Supplied with circuit breakers:
- Phase insulators and bar or lug connections

	Item							
	M4 630N		**M4 630L**		**M4 630N**		**M4 630L**	
Icu (kA)	50		100		50		100	
	Lsi				Lsig			
In (A)	3P	4P	3P	4P	3P	4P	3P	4P
250	**T743N250M**	**T744N250M**	**T743L250M**	**T744L250M**	**T743N250MT**	**T744N250MT**	**T743L250MT**	**T744L250MT**
320	**T743N320M**	**T744N320M**	**T743L320M**	**T744L320M**	**T743N320MT**	**T744N320MT**	**T743L320MT**	**T744L320MT**
400	**T743N400M**	**T744N400M**	**T743L400M**	**T744L400M**	**T743N400MT**	**T744N400MT**	**T743L400MT**	**T744L400MT**
500	**T743N500M**	**T744N500M**	**T743L500M**	**T744L500M**	**T743N500MT**	**T744N500MT**	**T743L500MT**	**T744L500MT**
630	**T743N630M**	**T744N630M**	**T743L630M**	**T744L630M**	**T743N630MT**	**T744N630MT**	**T743L630MT**	**T744L630MT**

M4 630F/N/L

contacts and shunt trips

M7X01

Item	AUXILIARY AND ALARM CONTACTS	
M7X01	1NO/NC 6A/230 Vac	- max. No. of contacts that can be installed: 3 (2 AUX + 1 AL) - reference standard: CEI EN 60947-5-1 - category of use: AC12 - switching time for opening: 6.5 ms - switching time for closing: 10 ms - switching time for tripping: 1 ms

M7C/...

Item	CURRENT RELEASE SHUNT TRIPS	
M7C024	24 Vac / dc	- reference standard: IEC 23-105 - operating voltage: 70 to 110 % Vn - circuit breaker opening time: < 50 ms - absorbed power: 300 VA/W
M7C048	48 Vac / dc	
M7C110	110 Vac / dc	
M7C230	230 Vac / dc	
M7C400	400 Vac / dc	

M7T...

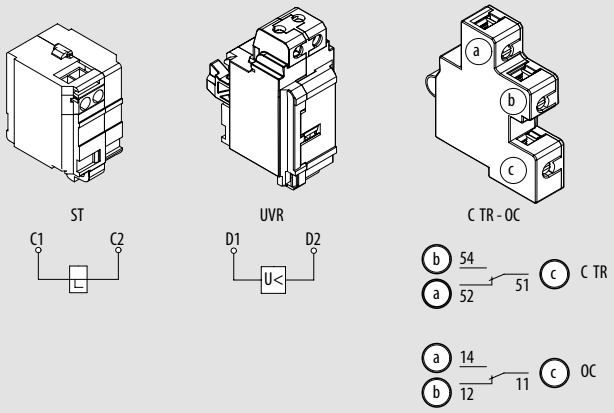
Item	MINIMUM VOLTAGE SHUNT TRIPS	
M7T024	24 Vac	- reference standard: IEC 23-105 - tripping voltage: 35 to 70 %Vn - reset voltage: 85 to 110 %Vn - tripping time (ms): < 50 ms - absorbed power: 5/1.6 VA/W
M7T024C	24 Vdc	
M7T048C	48 Vdc	
M7T230	230 Vac	
M7T400	400 Vac	

M7000MR/...

M7TMEV

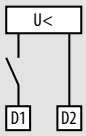
Item		EMERGENCY AND TIME-DELAY MODULES
M7000E/024	24 Vac / dc	emergency modules for minimum voltage shunt trips M7TMEV
M7000MR/230	230 Vac	time-delay modules for minimum voltage shunt trips M7TMEV. They introduce a tripping delay of 800 ms to prevent untimely opening of the circuit breakers.
M7000MR/400	400 Vac	
M7TMEV		time-delayed minimum voltage shunt trip to be used with modules item M7000... for MEGATIKER M4 630 and M5 1600

DIAGRAMS OF THE AUXILIARY AND ALARM CONTACTS

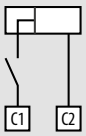


DIAGRAMS OF THE SHUNT TRIPS

Minimum voltage shunt trips



Current release shunt trips

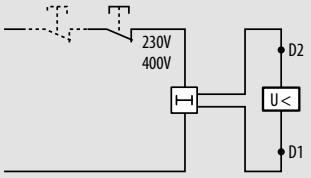


TECHNICAL DATA OF THE ST SHUNT TRIPS

Vn (Vac/dc)	Peak current (A)	Coil resistance (Ω)
24	7.5	3.2
48	5.5	8.1
100 to 130	2.5	35.4
220 to 250	1.5	146.5
380 to 440	0.9	427.3

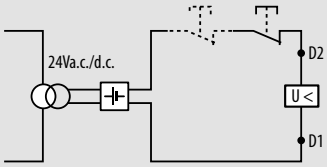
TIME-DELAY MODULE

- Delay introduced equal to 800ms
- Possibility of instantaneous circuit breaker tripping
- Module powering signalling LED
- Charge reserve (H)
- Max. number of charge/ discharge cycles



EMERGENCY MODULE

- Nickel cadmium battery for maintaining the circuit breaker in the closed state for up to 2 hours kept charged by mains voltage
- Slide switch for battery exclusion
- Battery excluded signalling LED



	TIME-DELAY	EMERGENCY
No. of modules	3	3
Rated voltage Vn (Vac)	230 to 400	24 (ac/dc)
Operating voltage (% Vn)	90 to 110	35 to 110
Tripping voltage (%Vn)	35	
Reset voltage (%Vn)	60	
Tripping time (ms)	800	
Total resistance (ohm)	200*	50
Max. section of connectable flexible cable (mm^2)	2.5	2.5

* maximum circuit resistance considering the length of the line and the maximum number of connected buttons

M4 630F/N/L

motor controls and rotary handles

M7475P/...

Item	SPRING CHARGING MOTOR CONTROLS	
M7475P/024	24 Vac / dc	- type: charging (direct for M74D230) - installation: front - rated voltage: 24-48 Vac /dc - 110-230 Vac - opening and reset time (s): 2; 0.27 (open.) 240 (reset) for item M74D230 - closing time (ms): ≤ 100; 0:55 for item M74D230 - mechanical durability (manoeuvres): 10000 - peak absorbed power (W): 300; 200 (open.) 240 (closing) for item M74D230 - maximum frequency of use: 10 manoeuvres/minute - Standby power consumption (W) 80 (open) 120 (reset) only for item M74D230
M7475P/048	48 Vac / dc	
M7475P/110 *	110 Vac	
M74D230	230Vac/dc	
M7475P/230 *	230 Vac	

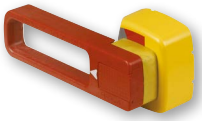
* DC versions available on request

M7M405

M7M415

Item	KEY LOCKS FOR MOTOR CONTROLS
M7M415	PROFALUX key lock for per spring charging motor
M7M405	RONIS key lock for per spring charging motor

T7449



T7449E

Item	DIRECT AND VARY-DEPTH ROTARY HANDLES
M7447	STANDARD direct rotary handle
T7449	STANDARD vary-depth rotary handle
M7R14	EMERGENCY direct rotary handle
T7449E	EMERGENCY vary-depth rotary handle

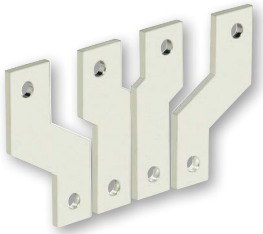
Item	KEY LOCKS FOR ROTARY HANDLES
M7163	Key lock for direct and vary-depth rotary handles
M7R15	Ronis key lock for vary-depth rotary handle
M7R16	Profalux key lock for vary-depth rotary handle
M7R15A	Ronis key lock EL43525 map for vary-depth rotary handle

M4 630F/N/L

connection accessories

M7430

M7430/3



M7430/4

M7450/P

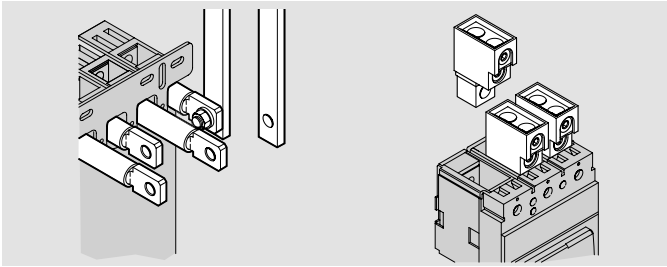
M7451/P

Item	FRONT AND REAR TERMINALS
M7430	Long front terminals to be chosen according to the number of poles
M7430/3	Offset long front terminals for 3P circuit breakers
M7430/4	Offset long front terminals for 4P circuit breakers
M7450/P	Flat offset rear terminals for 3P circuit breakers
M7451/P	Flat offset rear terminals for 4P circuit breakers

M7400

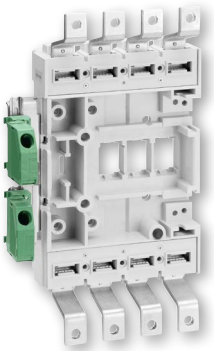
M7400/2

Item	CLAMPS FOR ALUMINIUM AND COPPER CABLES
M7400	Clamps for single cable (flexible: 1x240 mm^2, rigid: 1x300 mm^2)
M7400/2	Clamps for double cable (flexible: 2x185 mm^2, rigid: 2x240 mm^2)

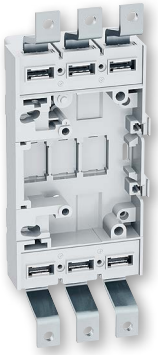


M4 630F/N/L

removable and draw-out version

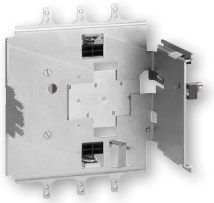


M7B14 + M7B20



M7B13

Item	REMOVABLE AND DRAW-OUT BASES
M7B13	Removable and draw-out bases for front terminals for 3P circuit breakers
M7B14	Removable and draw-out bases for front terminals for 4P circuit breakers
M7B17	Removable and draw-out bases for front terminals for 4P+earth leakage circuit breakers
M7B15	Removable and draw-out bases for flat rear terminals for 3P circuit breakers
M7B16	Removable and draw-out bases for flat rear terminals for 4P circuit breakers
M7B18	Removable and draw-out bases for flat rear terminals for 4P+earth leakage circuit breakers



M7B23

M7B12

Item	DRAW-OUT VERSION CONVERSION KIT
M7B22	Kit for removable bases for 3P circuit breakers
M7B23	Kit for removable bases for 4P circuit breakers
M7B24	Kit for removable bases for 4P+earth-leakage circuit breakers.

	SET OF TANGS
M7B11	Tangs for 3P circuit breakers
M7B12	Tangs for 4P circuit breakers

Item	ACCESSORIES FOR REMOVABLE AND DRAW-OUT VERSION
MT7412	Handle for circuit breaker removal
MT7910N	In/out signalling contact
M7B21	Auxiliary contacts for draw-out version (4 contacts, max. two codes that can be mounted)
M7B20	24-contact connector for electrical auxiliaries for removable version
MT7457PC	Front cover for draw-out version with door closed for 3P-4P circuit breakers
MT7457PC/D	Front cover for draw-out version with door closed for 4P + earth-leakage circuit breakers
MT7959	In/out key lock
M7B33	PROFALUX key lock for draw-out base
M7B34	RONIS key lock for draw-out base
M7B19	Pair of extractors for removable circuit breakers

M4 630F/N/L

various accessories

M7475

M7476

Item	CLAMP PROTECTION COVERS
M7C11	Clamp protection cover for 3P circuit breakers
M7C12	Clamp protection cover for 4P circuit breakers
M7475	Clamp protection cover for bottom bases item M7490
M7476	Clamp protection cover for bottom bases item M7491
M7490	Bottom bases for clamp protection covers item M7475
M7491	Bottom bases for clamp protection covers item M7476

M7295

M7045

M7152

M7162

M7152T

Item	VARIOUS INSTALLATION ACCESSORIES
M7295	Insulating shields between the phases (12x2 pcs)
M7045	Padlock lock for handle (OFF)
M7152	Front cover plate for 3P and 4P circuit breakers
M7162	Front cover plate for 4P circuit breakers with earth-leakage module
M7152T	Blanking module for item M7152
M7255	Adapter plate for non-preset panels

M7197N

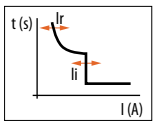
Item	MECHANICAL INTERLOCK
M7197N	interlock for fixed version

M5 1600N/H

thermal magnetic

T753...

T754...

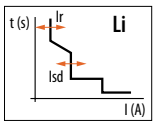


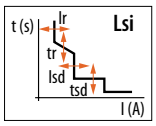
M5 1600N/L

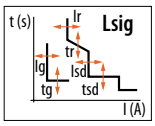
electronic with measurement functions

T753...EB

T754...M







Item **M5 1250 THERMAL MAGNETIC**

Thermal-magnetic circuit breakers for panel installation Circuit breaker and contact status display. Can be equipped with auxiliary and alarm contacts, shunt trips, multi-voltage motor control and mechanical interlock.

Supplied with circuit breakers:
- Phase insulators and bar or lug connections
- Earth-leakage protection using earth-leakage relay with separate toroids
- Adjustment of the tripping currents for overload and short-circuit

Item	M5 1250N		M5 1250H	
Icu (kA)	50		70	
In (A)	3P	4P	3P	4P
630	T753N630	T754N630	T753H630	T754H630
800	T753N800	T754N800	T753H800	T754H800
1000	T753N1000	T754N1000	T753H1000	T754H1000
1250	T753N1250	T754N1250	T753H1250	T754H1250

Item **M5 1600 ELECTRONIC**

Electronic circuit breakers for panel installation Circuit breaker and contact status display. Can be equipped with auxiliary and alarm contacts, shunt trips, multi-voltage motor control and mechanical interlock. Versions with integrated measurement functions

Supplied with circuit breakers:
- Phase insulators and bar or lug connections
- Earth-leakage protection using earth-leakage relay with separate toroids
- Adjustment of the tripping time and currents for overload and short-circuit type Li, Lsi and Lsig

Li	Item			
	M5 1600N		M5 1600L	
Icu (kA)	50		100	
In (A)	3P	4P	3P	4P
500	T753N500EB	T754N500EB	T753L500EB	T754L500EB
630	T753N630EB	T754N630EB	T753L630EB	T754L630EB
800	T753N800EB	T754N800EB	T753L800EB	T754L800EB
1000	T753N1000EB	T754N1000EB	T753L1000EB	T754L1000EB
1250	T753N1250EB	T754N1250EB	T753L1250EB	T754L1250EB
1600	T753N1600EB	T754N1600EB		

Lsi	3P	4P	3P	4P
630	T753N630M	T754N630M	T753L630M	T754L630M
800	T753N800M	T754N800M	T753L800M	T754L800M
1000	T753N1000M	T754N1000M	T753L1000M	T754L1000M
1250	T753N1250M	T754N1250M	T753L1250M	T754L1250M
1600	T753N1600M	T754N1600M		

Lsig	3P	4P	3P	4P
630	T753N630MT	T754N630MT	T753L630MT	T754L630MT
800	T753N800MT	T754N800MT	T753L800MT	T754L800MT
1000	T753N1000MT	T754N1000MT	T753L1000MT	T754L1000MT
1250	T753N1250MT	T754N1250MT	T753L1250MT	T754L1250MT
1600	T753N1600MT	T754N1600MT		

ACCESSORIES

M7X39	external neutral for 3P circuit breakers (compatible with LSI/LSIg versions without integrated measurement)

M5 1600

contacts and shunt trips

M7X01

Item	AUXILIARY AND ALARM CONTACTS	
M7X01	1NO/NC 6A/230 Vac	- max. No. of contacts that can be installed: 4 (3 AUX + 1 AL) - reference standard: CEI EN 60947-5-1 - category of use: AC12 - switching time for opening: 6.5 ms - switching time for closing: 5 ms - switching time for tripping: 1 ms

M7C/...

Item	CURRENT RELEASE SHUNT TRIPS	
M7C024	24 Vac / dc	- reference standard: IEC 23-105 - operating voltage: 70 to 110 % Vn - circuit breaker opening time: < 50 ms - absorbed power: 300 VA/W
M7C048	48 Vac / dc	
M7C110	110 Vac / dc	
M7C230	230 Vac / dc	
M7C400	400 Vac / dc	

M7T...

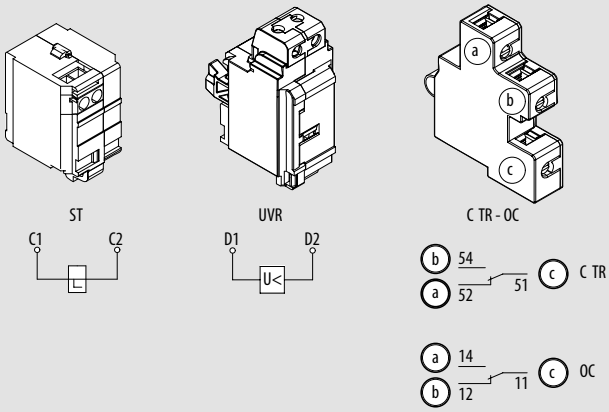
Item	MINIMUM VOLTAGE SHUNT TRIPS	
M7T024	24 Vac	- reference standard: IEC 23-105 - tripping voltage: 35 to 70 %Vn - reset voltage: 85 to 110 %Vn - tripping time (ms): < 50 ms - absorbed power: 5/1.6 VA/W
M7T024C	24 Vdc	
M7T048C	48 Vdc	
M7T230	230 Vac	
M7T400	400 Vac	

M7000MR/...

M7TMEV

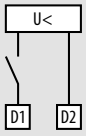
Item	EMERGENCY AND TIME-DELAY MODULES	
M7000E/024	24 Vac / dc	emergency modules for minimum voltage shunt trips M7TMEV
M7000MR/230	230 Vac	time-delay modules for minimum voltage shunt trips M7TMEV. They introduce a tripping delay of 800 ms to prevent untimely opening of the circuit breakers.
M7000MR/400	400 Vac	
M7TMEV		time-delayed minimum voltage shunt trip to be used with modules item M7000... for MEGATIKER M4 630 and M5 1600

DIAGRAMS OF THE AUXILIARY AND ALARM CONTACTS

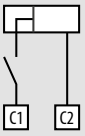


DIAGRAMS OF THE SHUNT TRIPS

Minimum voltage shunt trips



Current release shunt trips

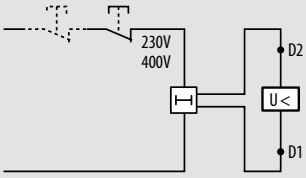


TECHNICAL DATA OF THE ST SHUNT TRIPS

Vn (Vac/dc)	Peak current (A)	Coil resistance (Ω)
24	7.5	3.2
48	5.5	8.1
100 to 130	2.5	35.4
220 to 250	1.5	146.5
380 to 440	0.9	427.3

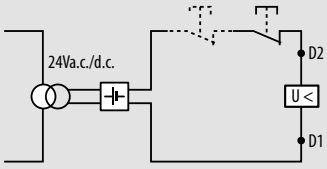
TIME-DELAY MODULE

- Delay introduced equal to 800ms
- Possibility of instantaneous circuit breaker tripping
- Module powering signalling LED
- Charge reserve (H)
- Max. number of charge/ discharge cycles



EMERGENCY MODULE

- Nickel cadmium battery for maintaining the circuit breaker in the closed state for up to 2 hours kept charged by mains voltage
- Slide switch for battery exclusion
- Battery excluded signalling LED



	TIME-DELAY	EMERGENCY
No. of modules	3	3
Rated voltage Vn (Vac)	230 to 400	24 (ac/dc)
Operating voltage (% Vn)	90 to 110	35 to 110
Tripping voltage (%Vn)	35	
Reset voltage (%Vn)	60	
Tripping time (ms)	800	
Total resistance (ohm)	200*	50
Max. section of connectable flexible cable (mm^2)	2.5	2.5

* maximum circuit resistance considering the length of the line and the maximum number of connected buttons

M7875P/230

M7875B230

Item	SPRING CHARGING MOTOR CONTROLS (TO BE FITTED AT THE FACTORY)	
M7875P/024	24 Vac / dc	- type: charging - installation: front - rated voltage: 24-48 Vac /dc - 110-230 Vac - opening and reset time (s): 6; - closing time (ms): ≤ 100; - mechanical durability (manoeuvres): 5000 - peak absorbed power (W): 460 - absorbed power in normal operating conditions (W): 160 - maximum frequency of use: 5 manoeuvres/ minute - Standby power consumption (W) 80 (open)
M7875P/048	48 Vac / dc	
M7875P/230 *	230 Vac	

* DC versions available on request

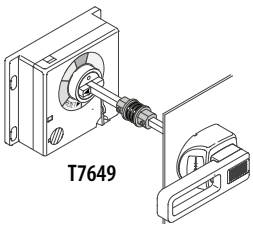
	DIRECT-OPERATED MOTOR CONTROLS	
M7875B24	24 Vac / dc for M630 to 1250	- type: direct - installation: front - rated voltage: 24 to 230 Vac /dc - opening and reset time (s): 8 - closing time (s): 4 - mechanical durability (manoeuvres): 5000 - peak absorbed power (W): 460 - absorbed power in normal operating conditions (W): 110 - maximum frequency of use: 5 manoeuvres/minute
M7875B48	48 Vac/dc for M630 to 1250	
M7875B110	110 Vac/dc for M630 to 1250	
M7875B230	230 Vac/dc for M630 to 1250	
M7875A24	24 Vac/dc for M1600	
M7875A48	48 Vac/dc for M1600	
M7875A110	110 Vac/dc for M1600	
M7875A230	230 Vac/dc for M1600	

M7M405

M7M415

Item	KEY LOCKS FOR MOTOR CONTROLS
M7M415	PROFALUX key lock for per spring charging motor
M7M405	RONIS key lock for per spring charging motor

M7647



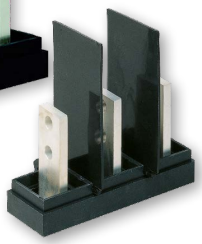
T7649

Item	DIRECT AND VARY-DEPTH ROTARY HANDLES
M7647	STANDARD direct rotary handle
T7649	STANDARD vary-depth rotary handle
T7649E	EMERGENCY vary-depth rotary handle
	KEY LOCKS FOR ROTARY HANDLES
M7163	Key lock for direct and vary-depth rotary handles
M7R15	Ronis key lock for vary-depth rotary handle
M7R16	Profalux key lock for vary-depth rotary handle
M7R15A	Ronis key lock EL43525 map for vary-depth rotary handle

M7940/2

M7940/3

M7960



M7950

M7961

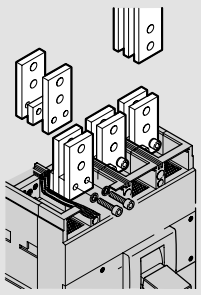
M7951

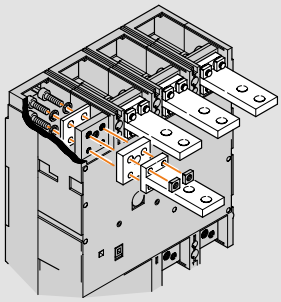
Item	FRONT AND REAR TERMINALS
M7940/2	Long front terminals to be chosen according to the number of poles In ≤ 1250A (1 piece)
M7940/3	As above In= 1600A
M7940/3S	Offset long front terminals for 3P circuit breakers
M7940/4S	Offset long front terminals for 4P circuit breakers
M7960	Flat offset rear terminals for 3P circuit breakers
M7961	Flat offset rear terminals for 4P circuit breakers
M7950	Flat rear terminals for 3P circuit breakers
M7951	Flat rear terminals for 4P circuit breakers

M7900/2

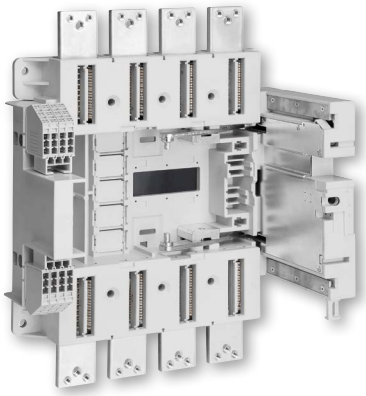
M7900/4

	CLAMPS FOR ALUMINIUM AND COPPER CABLES
M7900/2	Clamps for double cable (flexible: 2x185 mm^2, rigid: 2x240 mm^2)
M7900/4	Clamps for quadruple cable (flexible: 4x185 mm^2, rigid: 4x240 mm^2)



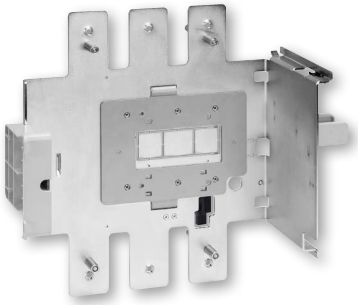


M5 1600
draw-out version



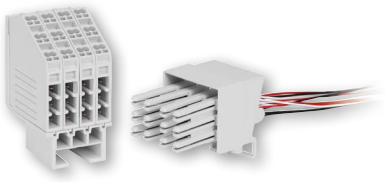
M7B26 + 2x M7B21

	DRAW-OUT BASES
M7B25	Draw-out base for front terminals for 3P circuit breakers
M7B26	Draw-out base for front terminals for 4P circuit breakers
M7B27	Draw-out base for flat rear terminals for 3P circuit breakers
M7B28	Draw-out base for flat rear terminals for 4P circuit breakers



	DRAW-OUT VERSION CONVERSION KIT
M7B29	Kit for removable bases for 3P circuit breakers
M7B30	Kit for removable bases for 4P circuit breakers

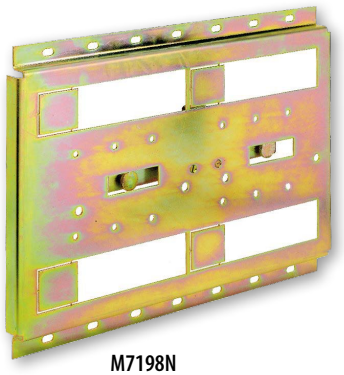
MT7959/2



M7B21

Item	ACCESSORIES FOR DRAW-OUT VERSION
MT7412	Handle for circuit breaker removal
MT7910N	In/out signalling contact
M7B21	Auxiliary contacts for draw-out version (4 contacts, max. two codes that can be mounted)
MT7959/2	In/out key lock with motors or rotary handles
M7B33	PROFALUX key lock for draw-out base
M7B34	RONIS key lock for draw-out base

M5 1600
various accessories



M7198N

Item	MECHANICAL INTERLOCK
M7198N	Interlock for fixed version (universal plate)
M7298N	Interlock for removable and draw-out version (universal plate)

M7935

M7936

Item	CLAMP PROTECTION COVERS
M7C13	Clamp protection cover for 3P circuit breakers
M7C14	Clamp protection cover for 4P circuit breakers
M7935	Clamp protection cover for 3P circuit breakers
M7936	Clamp protection cover for 4P circuit breakers

M7695

M7055

M7152

M7152T

Item	VARIOUS INSTALLATION ACCESSORIES
M7055	Padlock lock for handle (OFF)
M7695	Insulating shields between the phases (12x2 pcs)
M7152	Front cover plates
M7152T	Blanking module for item M7152

T714S160

T7303S125

T734S250

T754S800

DISCONNECTORS

- Circuit breaker status display
- Contact status display
- Auxiliary and alarm contacts
- Opening shunt trips
- Motor control
- Removable and draw-out version
- mechanical interlock
- Aptitude for sectioning

	Item		
	MS1 160		
In (A)	3P	4P	4P+earth leakage
160	**T713S160**	**T714S160**	**T714S160DB**

	MS2 250		
250	**T723S250**	**T724S250**	**T724S250D**

	MS3 125		
125	**T7303S125**	**T7304S125**	**T7304S125D**

	MS3 250		
250	**T733S250**	**T734S250**	**T734S250**

	MS4 630		
400	**T743S400**	**T744S400**	
630	**T743S630**	**T744S630**	

	MS5 1600		
630	**T753S630**	**T754S630**	
800	**T753S800**	**T754S800**	
1250	**T753S1250**	**T754S1250**	
1600	**T753S1600**	**T754S1600**	

CIRCUIT BREAKERS WITH ONLY MAGNETIC PROTECTION

T7MP13...

Magnetic-only and electronic circuit breakers for motor protection.
Ue = 690 Vac - CEI EN 60947-2 (annexed O)

Item		MP1 160E/B			
3P		In (A)	Icu (kA)	Ii (A)	Type
T7MP13E16		16	16	400	MP1 160E
T7MP13E25		25		500	
T7MP13E50		50		630	
T7MP13E63		63		100	
T7MP13B16		16	25	400	MP1 160B
T7MP13B25		25		500	
T7MP13B50		50		630	
T7MP13B63		63		1000	

		MP2 250F			
3P		In (A)	Icu (kA)	Ii (A)	Type
T7MP23F100		100	36	800-1600	MP2 250F
T7MP23F160		160		1000-2000	
T7MP23F200		200		1250-2500	
T7MP23F250		250		1250-2500	

		MP4 630F			
3P	4P	In (A)	Icu (kA)	Ii (A)	
T743F400MP	**T744F400MP**	400	36	2000-4000	MP4 630F
T743F500MP		500		2500-5000	
T743F630MP	**T744F630MP**	630		3150-6300	
T743H400MP	**T744H400MP**	400	70	2000-4000	MP4 630H
T743H500MP		500		2500-5000	
T743H630MP	**T744H630MP**	630		3150-6300	

	MP4 630F/H (ELECTRONIC)			
3P	In (A)	Icu (kA)	Ii (A)	
T743F320MPE	320	36	1.5-10 Ir	MP4 630F
T743F400MPE	400			
T743H320MPE	320	70	1.5-10 Ir	MP4 630H
T743H400MPE	400			

		MP5 1600N/H			
3P	4P	In (A)	Icu (kA)	Ii (A)	
T753N800MP	**T754N800MP**	800	50	4000-8000	MP5 1600N
T753N1000MP	**T754N1000MP**	1000		5000-10000	
T753H800MP	**T754H800MP**	800	70	4000-8000	MP5 1600H
T753H1000MP	**T754H1000MP**	1000		5000-10000	

Item		MP3 250F/N/H/L			
3P	4P	In (A)	Icu (kA)	Ii (A)	Type
T733F6MP	**T734F6MP**	6.3	36	31.5-63	MP3 250F
T733F12MP	**T734F12MP**	12.5		62.5-125	
T733F25MP	**T734F25MP**	25		125-250	
T733F32MP	**T734F32MP**	32		160-320	
T733F50MP	**T734F50MP**	50		250-500	
T733F80MP	**T734F80MP**	80		400-800	
T733F100MP	**T734F100MP**	100		500-1000	
T733F160MP	**T734F160MP**	160		800-1600	
T733F220MP	**T734F220MP**	220		1100-2200	
T733N6MP	**T734N6MP**	6.3	50	31.5-63	MP3 250N
T733N12MP	**T734N12MP**	12.5		62.5-125	
T733N25MP	**T734N25MP**	25		125-250	
T733N32MP	**T734N32MP**	32		160-320	
T733N50MP	**T734N50MP**	50		250-500	
T733N80MP	**T734N80MP**	80		400-800	
T733N100MP	**T734N100MP**	100		500-1000	
T733N160MP	**T734N160MP**	160		800-1600	
T733N220MP	**T734N220MP**	220		1100-2200	
T733H6MP	**T734H6MP**	6.3	70	31.5-63	MP3 250H
T733H12MP	**T734H12MP**	12.5		62.5-125	
T733H25MP	**T734H25MP**	25		125-250	
T733H32MP	**T734H32MP**	32		160-320	
T733H50MP	**T734H50MP**	50		250-500	
T733H80MP	**T734H80MP**	80		400-800	
T733H100MP	**T734H100MP**	100		500-1000	
T733H160MP	**T734H160MP**	160		800-1600	
T733H220MP	**T734H220MP**	220		1100-2200	
T733L6MP	**T734L6MP**	6.3	100	31.5-63	MP3 250L
T733L12MP	**T734L12MP**	12.5		62.5-125	
T733L25MP	**T734L25MP**	25		125-250	
T733L32MP	**T734L32MP**	32		160-320	
T733L50MP	**T734L50MP**	50		250-500	
T733L80MP	**T734L80MP**	80		400-800	
T733L100MP	**T734L100MP**	100		500-1000	
T733L160MP	**T734L160MP**	160		800-1600	
T733L220MP	**T734L220MP**	220		1100-2200	

ATS SWITCHING CONTROL UNIT

M7000CBNCU03

M7000CBNCU04

Automatic switching stations (ATS) can manage the reversal of power sources between two lines, manage the start-up and shut-down of generator sets, control single-phase, two-phase or three-phase networks, with phase-to-phase and phase-to-neutral voltage control.

Item	ATS SWITCHING CONTROL UNITS	
	Vn	Description
M7000CBNCU03	110-240 Vac	management of 2 sources and 2 circuit breakers
M7000CBNCU04	110-240 Vac	management of 2 sources and up to 3 circuit breakers

M7000CBNDPS

Item	MODULE FOR DOUBLE POWER SUPPLY
M7000CBNDPS	the dual auxiliary power supply module enables automatic selection of the most suitable source from two single-phase AC power supply lines. The selection criterion is based on the presence of voltage within predefined minimum and maximum limits. Its typical application is to provide auxiliary power to circuit breakers and control devices within an emergency switchboard. It can therefore be used in conjunction with automatic mains circuit breakers. Switching between the two lines is performed with defined and repeatable thresholds and times, guaranteeing system security. The two lines are separated with electrical safety interlocks. A self-diagnosis is also performed under the supervision of a microcontroller. In the event of a failure of both power supply lines and/or self-diagnosis of a malfunction, an additional alarm relay signals the alarm status to external devices.
M7000CBNUSB	front USB connector for ATS programming/management. Galvanic isolation for secure connections ensured via infrared communication with ATS front door
M7000CBNWIFI	Wi-Fi front interface for ATS programming/management. Galvanic isolation for secure connections ensured via infrared communication with ATS front door
M7000CBNRS485	opto-isolated RS485 interface module
M7000CBNEXP01	expansion with 4 opto-isolated static outputs
M7000CBNEXP02	expansion with 2 relay outputs
M7000CBNEXP03	expansion with 2 opto-isolated digital inputs - 2 relay outputs

TECHNICAL FEATURES

		M7000CBNCU03	M7000CBNCU04
AC power supply	Operating voltage Ue	110-240 Vac 110-250 Vdc	110-240 Vac 110-250 Vdc
	Frequency	45-66 Hz	45-66 Hz
	Maximum power consumption/absorption	3.8 W - 9.5 VA	110 Vac: 10VA/5.3W 240 Vac: 12.5 VA / 5.5W
DC power supply	Rated battery voltage	12 or 24 Vdc	12-48Vdc
	Maximum absorbed current	230 mA at 12 Vdc 120 mA at 24 Vdc	400 mA at 12 Vdc 220 mA at 24 Vdc 100 mA at 48 Vdc
	Input power	2.9 W	4.8 W
Voltmetric inputs L1 and L2	Maximum operating voltage	480 Vac (L-L) 277 Vac (L-N)	600 Vac (L-L) 346 Vac (L-N)
	Measurement range	45 to 66 Hz	45 - 66 Hz 360 to 8 Ω
	Measurement method	TRMS effective value	TRMS effective value
	Input impedance	>0.5 MΩ (L-N) >1.0 MΩ (L-L)	>0.55 MΩ (L-N) >1.10 MΩ (L-L)
	Connection	Single-phase, two-phase, three-phase, with and without balanced neutral	Three-phase with and without balanced neutral
Accuracy		±0.25% f.s. ±1 digit	±0.25% f.s. ±1 digit
AC power supply Insulation voltage	Rated insulating voltage Ui	250 Vac	250 Vac
	Rated impulse withstand voltage Uimp	7.3kV	7.3kV
	Holding voltage at operating frequency	3kV	3kV
Line 1 and Line 2 insulation voltage	Rated insulating voltage Ui	480 Vac	600 Vac
	Rated impulse withstand voltage Uimp	7.3kV	9.8kV
	Holding voltage at operating frequency	3.8kV	5.2kV
Operating environmental conditions	Operating temperature	-30 °C to +70 °C	-30 °C to +70 °C
	Storage temperature	-30 °C to +80 °C	-30 °C to +80 °C
	Category of measurement	III	III
Connections	Type of clamps	Draw-out	Draw-out
	Conductor section	0.2 to 2.5 mm²	0.2 to 2.5 mm²
	Tightening torque	0.56 Nm	0.56 Nm
Housing	Protection index	IP40 (front) IP20 (terminals)	IP65 (front) IP20 (terminals)
	Dimensions (LxHxD)	144x144x53 mm	240x180x67.7 mm
	Weight	680 kg	1000 kg
ModBus default configuration	Node address	-	5
	Speed	-	19200
	Data format	-	8 bits - even
	Stop bits	-	1
	Protocol	-	RTU

TECHNICAL FEATURES

		M7000CBNDPS
Power supply (voltmetric inputs L1-L2)	Max. rated voltage Ue	230 Vac
	Rated frequency	45-66 Hz
	Maximum power consumption/ absorption	7 VA - 2.4 W
Voltmetric inputs L1 and L2	Max. rated voltage Ue	230 Vac
	Measurement range	80 to 300 Vac
	Frequency range	45 to 66 hz
	Type of measurement	TRMS
	Input impedance	>8 MΩ (L-N)
	Connection	Power supply taken from the system with phase-neutral voltage ≤300 Vac
Accuracy		±1 digit
AC power supply Insulation voltage	Rated insulating voltage Ui	250 Vac
	Rated impulse withstand voltage Uimp	4.8kV
	Holding voltage at operating frequency	2.21kV
Operating environmental conditions	Operating temperature	-30 °C to +70 °C
	Storage temperature	-30 °C to +80 °C
	Category of measurement	III
Connections	Type of clamps	screw
	Conductor section	0.2 to 4 mm²
	Tightening torque	0.8 Nm
Housing	Protection index	IP40 (front) IP20 (terminals)
	Dimensions	3 DIN35 modules
	Weight	300 kg

INTERFACE FOR ELECTRONIC MEGATIKER

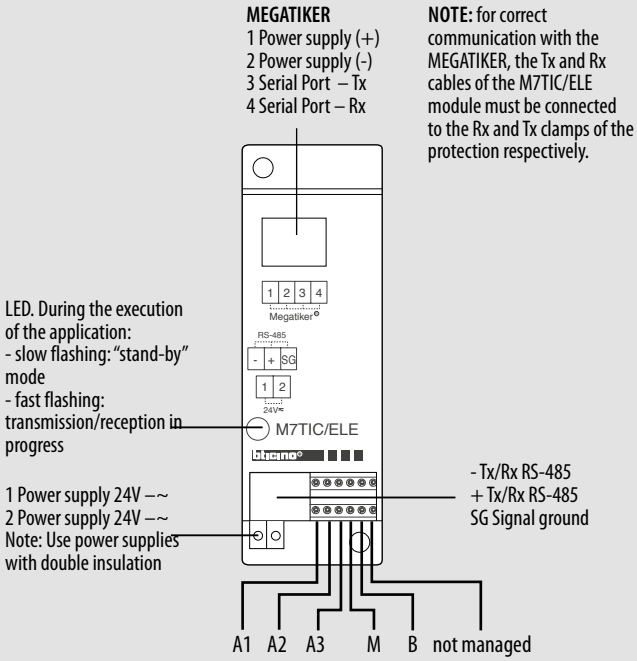
M7TIC/ELE

PM1TS

Item	INTERFACE FOR ELECTRONIC CIRCUIT BREAKERS
M7TIC/ELE	interface for electronic MEGATIKER M250-1600, type "Lsi" or "Lsig", for configuration with configurator set (item 3501k). It converts data available on the circuit breaker circuit board into data on MODBUS protocol. It detects the circuit breaker characteristics, trip history and last trip details. Communication network with MODBUS protocol on RS-485 physical level. Vn = 24 Vac/dc
M7COM	interface for electronic MEGATIKER M1 160, M2 250, M4 630 and M5 1600. It converts data available on the circuit breaker circuit board into data on MODBUS protocol. It detects the circuit breaker characteristics, trip history and last trip details. Communication network with MODBUS protocol on RS-485 physical level. Vn = 24 Vac/dc - 1 DIN module
PM1TS	display. Allows the display of different electrical values from different protective devices. It can manage up to 8 devices. Supply voltage: 18 to 30 Vdc Panel or panel door mounting (96x96 mm)

TECHNICAL FEATURES

Dimensions	2 DIN modules
Operating temperature	-10 to 55 °C
Power supply	24 Vac/Vdc
Serial port	RS-485 2 wires
MODBUS address	(1 to 247)
Speed	1.2, 2.4, 4.8, 9.6, 19.2, 38.4 Kbit/s
Configuration	using SCS configurators
Operating modes	RTU and ASCII
Waiting time between two transmissions	10 ms
Wiring	RS-485 serial (e.g. BELDEN 9842 cable)
	Circuit breakers with cable



M7COM TECHNICAL DATA

Port	2 wires
RS485 serial power supply (Vac/Vdc)	34
Operating modes	RTU - ASCII

EARTH-LEAKAGE RELAY WITH SEPARATE TOROIDS

G701N

G701Q

G701T/...

Item	EARTH-LEAKAGE RELAY		
	Earth-leakage relay type A with adjustable current and tripping time, 1 NO/NC contact at the output		
	IΔn (A)	Δt (s)	No. of modules
G701N	0.03 to 30	0 to 5	2

	PANEL EARTH-LEAKAGE RELAY		
	Earth-leakage relay with adjustable current and tripping time, 1 NO/NC contact at the output, 1 NO/NC 50% IΔn pre-alarm signalling contact		
	IΔn (A)	Δt (s)	LxH (mm)
G701Q	0.03 to 30	0 to 5	72x72

	TOROIDS FOR EARTH-LEAKAGE RELAY			
	Ø int	IΔn mini (A)	I_n (A)(2)	I_{max} (A)(3)
G701T/35N	35	0.03	70	420
G701T/80N	80	0.05	170	1020
G701T/110N	110	0.1	250	1500
G701T/140N	140	0.3	250	1500
G701T/210N	210	0.3	400	2400
G701T/150A *	150	0.5	250	1500
G701T/300A *	310	1	630	3780

* Opening-type toroid

(2) : value of maximum current that can pass through the toroid when the cable assembly is not perfectly centred and not perpendicular to its passage through the coil

(3) : value of maximum current that can pass through the toroid when the cable assembly is perfectly centred and perpendicular to its passage through the coil

TECHNICAL FEATURES

Separate toroid earth-leakage relays control the opening of one or more circuit breakers by means of opening shunt trips when an earth fault current exceeds the set threshold value. A mechanical interlock prevents setting a delay time when the earth-leakage current value of 0.03A is selected. The presence or absence of a jumper determines the type of operation of the earth-leakage relay:

• With the jumper connected, the device operates in **Conditional safety** (standard) and only causes the circuit breakers to open in the presence of earth fault current

- with the jumper disconnected, it operates in **Unconditional safety** (positive) and the opening of the circuit breakers is conditional on either the presence of an earth fault current or a power failure at the earth-leakage relay.

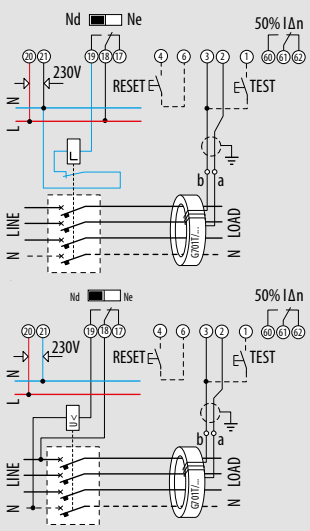
TECHNICAL DATA OF THE EARTH-LEAKAGE RELAYS

Operating frequency	47 to 63 Hz (fn 50 Hz)
Rated earth leakage current IΔn (A)	selectable to 7 positions and 3 ranges x1-x10-x100
Tripping time t (s)	selectable in 7 positions (0-0,15-0,25-0,5-1-2,5 -5)
Green ON LED	powered instrument
Red TRIP LED	tripping + relay switching
Flashing red TRIP LED	tripping of relay-toroid connections + relay switching
Operating temperature	-5 to 50 °C
Protection index	IP50 (front), IP20 (clamps and housing)
Suitable for use in tropical climates	yes

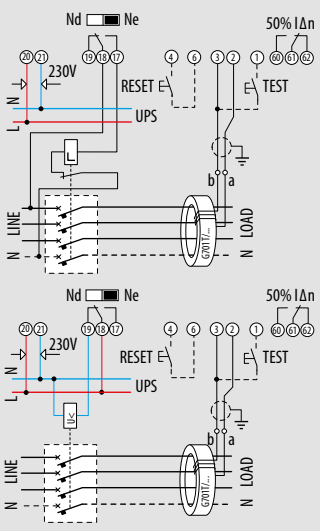
TECHNICAL DATA OF THE TOROIDS

Reference standards	IEC 755
Toroid diameter (mm)	35 to 300
Maximum rated current In (A)	200 to 2000
Rated earth leakage current IΔn (A)	0.03 to 30
Insulation resistance (Mohm)	≥10
Primary/secondary loop ratio	1/700
Short circuit thermal current Ith for 1s (kA)	20
Dynamic current Idn for 0.05s (kA)	40
Operating temperature (°C)	-10 to 55
Max. section of connectable cable (mm^2)	2.5

Standard safety (Nd)



Positive safety (Ne)



MEGASWITCH

Disconnectors from 63 to 1600 A

THE ADVANTAGES OF THE OFFER

5 SIZES FOR ALL NEEDS

- Disconnectors available in only 5 sizes for maximum installation flexibility

DISCONNECTION ALWAYS VISIBLE

- Contact status always visible from the front of the device

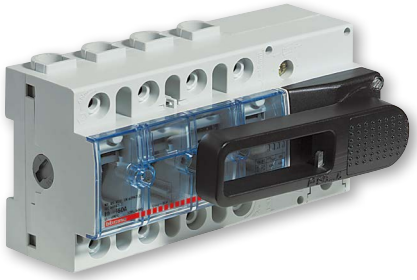
COMMON ACCESSORIES

- Same installation and control accessories as the MEGATIKER range

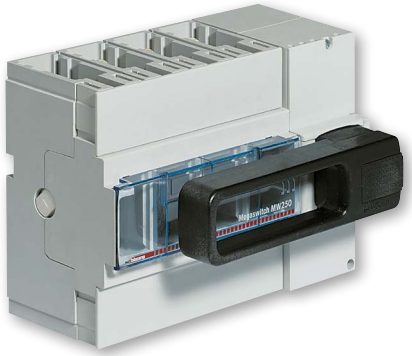
SAME DEPTH

- MW63 and MW160 disconnectors have the same depth as the BTDIN, for simple side-by-side installation on the same DIN35 rail

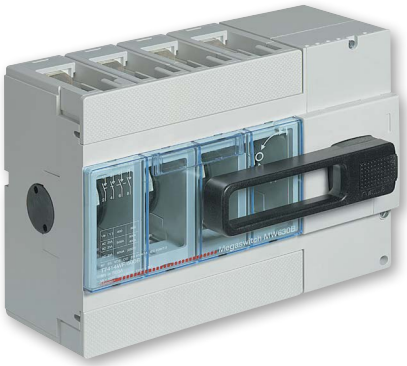
T7014WF/63



T7134WF/...



T7234WF/...



T7414WF/...

T7814WF/...

Item		DISCONNECTORS MW63 AND MW160	
		Installation on DIN35 rail Ue = 690 Vac - CEI EN 60947-3 Category of use AC23A (up to 500Vac)	
3P	4P	In (A)	Type
T7013WF/63	**T7014WF/63**	63	MW63
T7133WF/100	**T7134WF/100**	100	MW160
T7133WF/125	**T7134WF/125**	125	
T7133WF/160	**T7134WF/160**	160	

		DISCONNECTORS MW250	
		Installation on DIN35 rail and plate Ue = 690 Vac - CEI EN 60947-3 Category of use AC23A (up to 500 Vac)	
3P	4P	In (A)	
T7233WF/160	**T7234WF/160**	160	MW250 standard
T7233WF/200	**T7234WF/200**	200	
T7233WF/250	**T7234WF/250**	250	
T7233WF/160B	**T7234WF/160B**	160	MW250 with trip
T7233WF/200B	**T7234WF/200B**	200	
T7233WF/250B	**T7234WF/250B**	250	

	ACCESSORIES FOR MW63 AND MW160
MW5A/1CS	Auxiliary and alarm contact 1NO/NC - 250 Vac (complete with support)
MW5/1CS	Auxiliary and alarm contact 1NO/NC - 250 Vac
MW7006E	EMERGENCY HANDLE Protection index IP55
MW7006	Kit for rotary handles on long shaft. Protection index IP55

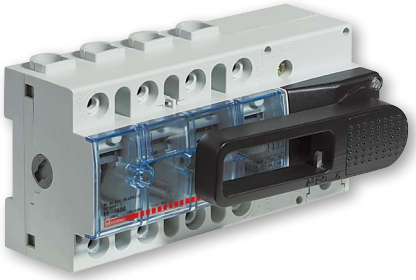
Item		DISCONNECTORS MW630	
		Installation on plate Ue = 690 Vac - CEI EN 60947-3 Category of use AC23A (up to 500 Vac)	
3P	4P	In (A)	
T7413WF/320	**T7414WF/320**	320	MW630 standard
T7413WF/400	**T7414WF/400**	400	
T7413WF/500	**T7414WF/500**	500	
T7413WF/630	**T7414WF/630**	630	
T7413WF/320B	**T7414WF/320B**	320	MW630 with trip
T7413WF/400B	**T7414WF/400B**	400	
T7413WF/500B	**T7414WF/500B**	500	
T7413WF/630B	**T7414WF/630B**	630	

		DISCONNECTORS MW1600	
		Installation on plate Ue = 690 Vac - CEI EN 60947-3 Category of use AC23A (up to 500 Vac)	
3P	4P	In (A)	
T7813WF800B	**T7814WF800B**	800	MW1600 with trip
T7813WF1000B	**T7814WF1000B**	1000	
T7813WF1250B	**T7814WF1250B**	1250	
T7813WF1600B	**T7814WF1600B**	1600	

MEGASWITCH

MW63, MW160, MW250, MW630, MW1600

T7014WF/63



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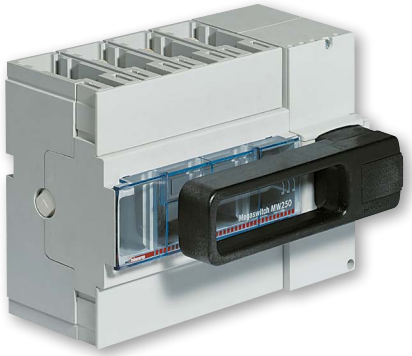

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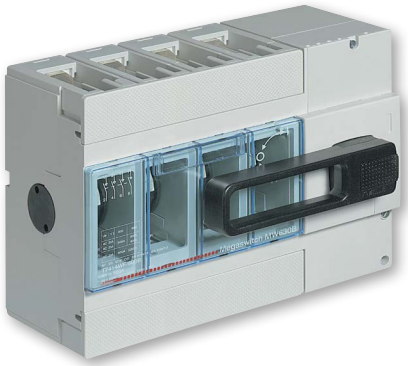


T7414WF/...

T7814WF/...

Item		DISCONNECTORS MW63 AND MW160	
		Installation on DIN35 rail Ue = 690 Vac - CEI EN 60947-3 Category of use AC23A (up to 500Vac)	
3P	4P	In (A)	Type
T7013WF/63	**T7014WF/63**	63	MW63
T7133WF/100	**T7134WF/100**	100	MW160
T7133WF/125	**T7134WF/125**	125	
T7133WF/160	**T7134WF/160**	160	

		DISCONNECTORS MW250	
		Installation on DIN35 rail and plate Ue = 690 Vac - CEI EN 60947-3 Category of use AC23A (up to 500 Vac)	
3P	4P	In (A)	
T7233WF/160	**T7234WF/160**	160	MW250 standard
T7233WF/200	**T7234WF/200**	200	
T7233WF/250	**T7234WF/250**	250	
T7233WF/160B	**T7234WF/160B**	160	MW250 with trip
T7233WF/200B	**T7234WF/200B**	200	
T7233WF/250B	**T7234WF/250B**	250	

	ACCESSORIES FOR MW63 AND MW160
MW5A/1CS	Auxiliary and alarm contact 1NO/NC - 250 Vac (complete with support)
MW5/1CS	Auxiliary and alarm contact 1NO/NC - 250 Vac
MW7006E	Emergency handle protection index IP55
MW7006	Kit for rotary handles on long shaft. Protection index IP55

Item		DISCONNECTORS MW630	
		Installation on plate Ue = 690 Vac - CEI EN 60947-3 Category of use AC23A (up to 500 Vac)	
3P	4P	In (A)	
T7413WF/320	**T7414WF/320**	320	MW630 standard
T7413WF/400	**T7414WF/400**	400	
T7413WF/500	**T7414WF/500**	500	
T7413WF/630	**T7414WF/630**	630	
T7413WF/320B	**T7414WF/320B**	320	MW630 with trip
T7413WF/400B	**T7414WF/400B**	400	
T7413WF/500B	**T7414WF/500B**	500	
T7413WF/630B	**T7414WF/630B**	630	

		DISCONNECTORS MW1600	
		Installation on plate Ue = 690 Vac - CEI EN 60947-3 Category of use AC23A (up to 500 Vac)	
3P	4P	In (A)	
T7813WF800B	**T7814WF800B**	800	MW1600 with trip
T7813WF1000B	**T7814WF1000B**	1000	
T7813WF1250B	**T7814WF1250B**	1250	
T7813WF1600B	**T7814WF1600B**	1600	

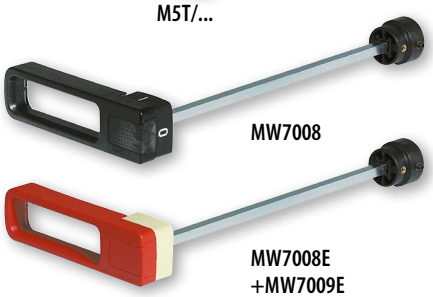
MEGASWITCH

Accessories for MW250, MW630, MW1600

M5M/...

M5T/...

MW5A/1CS



MW7008

MW7008E
+MW7009E

Item	ELECTRIC AUXILIARIES
M5/1CS	1NO/NC - 250 Vac

	CURRENT RELEASE SHUNT TRIPS
M5T/024	24 Vac / dc
M5T/048	48 Vac / dc
M5T/110	110 Vac
M5T/220	230 Vac
M5T/380	400 Vac

	MINIMUM VOLTAGE SHUNT TRIPS FOR MW250-630
M5M/024	24 Vac
M5M/024C	24 Vdc
M5M/048C	48 Vdc
M5M/220	230 Vac
M5M/380	400 Vac

	MINIMUM VOLTAGE SHUNT TRIPS FOR MW1600
M4M/024	24 Vac
M4M/024C	24 Vdc
M4M/048C	48 Vdc
M4M/220	230 Vac
M4M/380	400 Vac

	DELAYED MINIMUM VOLTAGE SHUNT TRIPS
	disconnector
M5MEV	MW250-630
M4MEV	MW1600

	EMERGENCY AND TIME-DELAY MODULES
M7000E/024	Emergency module 24 Vac/dc
M7000MR/230	Time-delay module 230 Vac
M7000MR/400	Time-delay module 400 Vac

	EMERGENCY HANDLE	
	IP index	disconnector
MW7008E	IP55	MW250-630

	KIT FOR ROTARY HANDLES ON LONG SHAFT	
	IP index	disconnector
MW7008	IP55	MW250-630
MW7009E	IP55	MW250-630 (to be ordered together with handle item MW7008E)

MW7276

MW7096B

MW7237

Item	CLAMPS FOR ALUMINIUM AND COPPER CABLES		
	flexible cable (mm^2)	rigid cable (mm^2)	disconnector
M7200	1x150	1x185	MW250
M7400	1x240	1x300	MW630
M7400/2	2x185	2x240	MW630
M7900/2	2x185	2x240	MW1600
M7900/4	4x185	4x240	MW1600

		FRONT TERMINALS		
3P	4P	type of terminal	hole (mm)	disconnector
MW7230/3	**MW7230/4**	long offset	9	MW250
M7430/3	**M7430/4**	long offset	14	MW630
M7940/3S	**M7940/4S**	long offset	14	MW1600

	LONG FRONT TERMINALS		
	type of terminal	hole (mm)	disconnector
M7430	long	14	MW630
M7940/3	long	14	MW1600

		REAR TERMINALS		
3P	4P	type of terminal	hole (mm)	disconnector
M7950	**M7951**	flat	14	MW1600
M7450/P	**M7451/P**	flat offset	14	MW630
M7960	**M7961**	flat offset	14	MW1600
M7240	**M7241**	tanged offset	M10	MW250
M7450	**M7451**	tanged offset	M12	MW630

	MECHANICAL INTERLOCKS
MW7097	Mechanical interlock for disconnectors MW250 with Ronis key
MW7098	Mechanical interlock for disconnectors MW250 with Profalux key
MW7194	Mechanical interlock for disconnectors MW630 with Ronis key
MW7195	Mechanical interlock for disconnectors MW630 with Profalux key

	CLAMP PROTECTION COVERS
3P-4P	disconnectors
MW7276	MW250
M7476	MW630
M7936	MW1600

	KEY LOCKS	
	type	disconnector
MW7096B	Eurolocks (can only be fitted at the factory)	MW250
MW7196	Eurolocks	MW630
MW7197	Ronis	MW1600

	PLATE FOR DIN35 RAIL
	type
MW7237	for MW250

TECHNICAL FEATURES AND TRIPPING CURVES

Technical features of thermal-magnetic circuit breakers

FEATURES OF THERMAL-MAGNETIC CIRCUIT BREAKERS

Compliance with standards CEI EN 60947-2		M1 160		M2 250		M3 125 E M3 160				M3 250				M4 630F/N/L			M5 1600N/H	
		E	B	B	F	F	N	H	L	F	N	H	L	F	N	L	N	H
Rated current of the shunt trips at 40/50 °C In (A)		16-25-40-63-80-100-125-160		100-160-200-250		16-20-25-32-40-50-63-80-100-125-160				16-20-25-32- 40-50-63-80-100-125-160-200-250				250-320-400-500-630			630-800-1000-1250	
Insulation voltage Ui (V)		800		800		800				800				800			1000	
Rated voltage (50/60 Hz) Ue (Vac)		690		690		690				690				690			690	
Impulse withstand voltage Uimp (kV)		8		8		8				8				8			8	
Operating temperature (°C)		-25 to 70		-25 to 70		-25 to 70				-25 to 70				-25 to 70			-25 to 70	
Extreme breaking capacity Icu (kA)	240 Vac	25	35	40	60	70	90	100	150	70	90	100	150	70	100	150	100	120
	415 Vac	16	25	25	36	36	50	70	100	36	50	70	100	36	50	100	50	70
	500 Vac	8	10	10	25	12	16	20	25	16	18	30	35	25	30	50	35	45
	690 Vac	5	5	8	16	5	6	10	12	7	8	20	22	14	18	22	20	22
Service breaking capacity Ics (% Icu)		100	100	100	100	100	100	100	100	100	100	100	100	100	100	70	100	100
Rated closing capacity Icm (kA)	415 Vac	32	52.5	52.5	76.5	76.5	105	154	220	76.5	105	154	220	76.5	105	220	105	154
Protection against overload		0.8-0.9-1 In		0.8-0.9-1 In		0.8-0.9-1 x In				0.8-0.9-1 x In				0.8-0.9-1 In			0.8-0.9-1 In	
Protection against short circuit		400 A (In up to 40 A); 10 x In (In > 40A)		5-10 In		400 A (In up to 40 A); 10 x In (In > 40 A)				400 up to 40 A 6.5-10-13 x In for In=50 A 5-7.5-10 x In up to 250 A				5-10 In			5-10 Ir	
Neutral protection for 4P version (% of phase)		-		-		100				100				100			100	
Category of use		A		A		A				A				A			A	
Aptitude for sectioning		yes		yes		yes				yes				yes			yes	
Max No. of manoeuvres	mechanical	25000		20000		20000				12000				20000			10000	
	electric	8000		8000		8000				6000				4000			4000	
Protection index (front/clamps)		IP20/IP30		IP20/IP30		IP20/IP30				IP20/IP30				IP20/IP30			IP20/IP30	
Max. wiring section (mm²)	flexible cable	70 (120 with item M7X07 and M7X17)		120		50 (70 for M3 160)				150				240			4x185	
	rigid cable	95 (150 with item M7X07 and M7X17)		150		70 (95 for M3 160)				185				300			4x240	
	busbar	19		28.5x8x8.5		17				25				32			50	
Dimensions LxHxD (mm)		26 (per pole) x 130 x 97		35 (per pole) x 165 x 100		25 (per pole) x 135 x 86				35 (per pole) x 165 x 86				42 (per pole) x 260 x 105			70 (per pole) x 320 x 140	

Note: For direct current versions please contact BTicino

FEATURES OF THERMAL-MAGNETIC CIRCUIT BREAKERS WITH EARTH-LEAKAGE PROTECTION

Compliance with standards CEI EN 60947-2		M1 160		M2 250		M3 125 E M3 160		M3 250	
		E	B	B	F	F	N	F	N
Rated current of the shunt trips at 40/50 °C In (A)		16-25-40-63-80-100-125-160		100-160-200-250		16-20-25-32-40-50-63-80-100-125-160		16-20-25-32- 40-50-63-80-100-125-160-200-250	
Insulation voltage Ui (V)		500		500		500		500	
Rated voltage (50/60 Hz) Ue (Vac)		500		500		500		500	
Impulse withstand voltage Uimp (kV)		6		6		6		6	
Operating temperature (°C)		-25 to 70		-25 to 70		-25 to 70		-25 to 70	
Extreme breaking capacity Icu (kA)	240 Vac	25	35	40	60	70	90	70	90
	415 Vac	16	25	25	36	36	50	36	50
	460 Vac	10	18	20	30	20	25	25	30
	500 Vac	8	10	8	16	12	16	16	18
Service breaking capacity Ics (% Icu)		100	100	100	100	100	100	100	100
Rated closing capacity Icm (kA)	415 Vac	32	52.5	52.5	76.5	76.5	105	76.5	105
Protection against overload		0.8-0.9-1 In		0.8-0.9-1 In		0.8-0.9-1 x In		0.8-0.9-1 x In	
Protection against short circuit		10 In (400 A for In= 16-25 A)		5-10 In		400 A (In up to 40 A); 10 x In (In > 40 A)		400 up to 40 A 6.5-10-13 x In for In=50 A 5-7.5-10 x In up to 250 A	
Earth-leakage protection (type A-S)	IΔn (A)	0.03-0.3-1-3		0.03-0.3-1-3		0.03-0.3-1-3		0.03-0.3-1-3	
	ΔT (s)	0-0.3-1-3		0-0.3-1-3		0-0.3-1-3		0-0.3-1-3	
Neutral protection for 4P version (% of phase)		-		-		100		100	
Category of use		A		A		A		A	
Aptitude for sectioning		yes		yes		yes		yes	
Max No. of manoeuvres	mechanical	25000		20000		20000		12000	
	electric	8000		8000		8000		6000	
Protection index (front/clamps)		IP20/IP30		IP20/IP30		IP20/IP30		IP20/IP30	
Max. wiring section (mm²)	flexible cable	70 (120 with item M7X07 and M7X17)		120		50 (70 for M3 160)		150	
	rigid cable	95 (150 with item M7X07 and M7X17)		150		70 (95 for M3 160)		185	
	busbar	19		28.5x8x8.5		17		25	
Dimensions LxHxD (mm)		26 (per pole) x 160 x 97		35 (per pole) x 195 x 100		25 (per pole) x 136 x 86		35 (per pole) x 165 x 86	

Note: For direct current versions please contact BTicino

MEGATIKER

Technical features of electronic circuit breakers

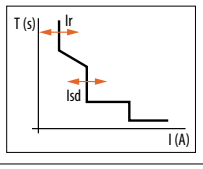
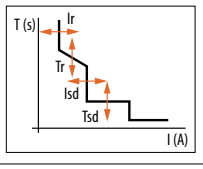
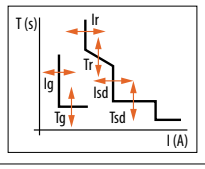
FEATURES OF ELECTRONIC CIRCUIT BREAKERS

Compliance with standards CEI EN 60947-2		M2 250		M3 250				M4 630			M5 1600	
		B	F	F	N	H	L	F	N	L	N	L
Rated current of the shunt trips at 40°C In (A)		40 - 100 - 160 - 250		40 - 100 - 160 - 250				250 - 320-400 - 500 - 630			500 - 630 - 800 - 1000 - 1250 - 1600	
Insulation voltage Ui (V)		800		800 (500 with earth leakage)				800			1000	
Impulse withstand voltage Uimp (kV)		8		8 (6 with earth leakage)				8			8	
Rated voltage (50/60 Hz) Ue (Vac)		690		690 (500 with earth leakage)				690			690	
Operating temperature (°C)		-25 to 70		-25 to 70				-25 to 70			-25 to 70	
Extreme breaking capacity Icu (kA)	250 Vac	40	60	70	90	100	150	70	100	150	100	150
	415 Vac	25	36	36	50	70	100	36	50	100	50	100 (80 x In = 1600 A)
	460 Vac	20	30	25	30	40	50	30	40	70	45	80
	500 Vac	10	25	16	18	30	35	25	30	50	35	55
	600 Vac	-	-	10	12	22	25	20	22	28	24	30
	690 Vac	8	16	7	8	20	22	14	18	22	20	25
Service breaking capacity Ics (% Icu)		100	100	100	100	100	100	100	100	70	100	70 (90 x1600A)
Rated closing capacity Icm (kA)	415 Vac	52.5	75.6	76.5	105	154	220	75.6	154	220	105	220
Rated short-time current Icw (kA)		-		-				5 (up to 400 A) for t = 0.5 s			10 (up to 800 A) - 15 (for 1000 and 1250 A - 20 (for 1600 A) for t = 0.05s	
Type of protection		**Lsi**		**Li**				**Li**			**Li**	
Protection against overload	Ir (x In)	0.4 to 1 (1A step)		0.4-0.45-0.5-0.55-0.6-0.65-0.7-0.75-0.85-0.95-1				0.4-0.45-0.5-0.55-0.6-0.65-0.7-0.75-0.85-0.95-1			0.4 to 1 In (1A step)	
	Tr (s) (at 6I r)	3-5-10-15		5				5			-	
Protection against short circuit	Isd (x Ir)	1.5-2-2.5-3-4-5-6-7-8-9-10		1.5-2-2.5-3-4-5-6-8-10				1.5-2-2.5-3-4-5-6-7-8-10			1.5-2-2.5-3-4-5-6-7-8-9-10	
	Tsd (s)	0-0.1-0.2-0.3-0.4-0.5		0.1				0.1			-	
	Tsd (t=k)	0.01-0.1-0.2-0.3-0.4-0.5 (at 12Ir)		0.01-0.1-0.2-0.3 (at 12Ir)				0.01-0.1-0.2-0.3 (at 12Ir)			-	
Earth-leakage protection	IΔn (A)	0.03-0.3-1-3		0.03-0.3-1-3				see earth-leakage modules			-	
	Δt (s)	0-0.3-1-3		0-0.3-1-3							-	
Protection against earth fault	Ig (xIr)	0.2-0.3-0.4-0.5-0.6-0.7-0.8-1-OFF		-				0.2-0.3-0.4-0.5-0.6-0.7-0.8-1-OFF			-	
	Tg (s) (t=k)	0.1-0.2-0.5-1		-				0.1-0.2-0.5-1			-	
Neutral protection	N	0-50-100-150-200%		0-50-100				0-50-100-150-200%			0-50-100-150-200%	
Fixed instantaneous trip (kA)	Ii	-		3.25				-			10 kA (630-800 A) - 15 kA (1250 A) - 20 kA (1600 A)	
Category of use		A		A				B (up to 400A) A (for 500 and 630A)			B	
Aptitude for sectioning		yes		yes				yes			yes	
Max No. of manoeuvres	mechanical	20000		12000				20000			10000	
	electric	8000		6000				4000			4000	
Protection index (front/clamps)		120		IP20/IP30				IP20/IP30			IP20/IP30	
Max. wiring section (mm^2)	flexible cable	150		120				240			4x185	
	rigid cable	28.5x8x8.5		150				300			4x240	
	busbar	28.5x8x8.5		25				32			50	
Dimensions LxHxD (mm)		35 (per pole) x 195 x 74		105 (3P) / 140 (4P) x 165 x 86				43.5 (per pole) x 260 x 105			70 (per pole) x 320 x 140	

MEASUREMENT

Current	I1 - I2 - I3 - IN
Voltage	U1 - U2 - U3 - V1N - V2N - V3N
Energy	Ep - Eq (bidirectional)
THD	THDV - THDI - 123 - 132
Power factor	Pf
Frequency	Hz
Power	Ptot - Qtot

TYPE OF ELECTRONIC PROTECTION

Li	Lsi	Lsig
		

MEGATIKER

Technical features of only magnetic circuit breakers

FEATURES OF ONLY MAGNETIC CIRCUIT BREAKERS

Compliance with standards CEI EN 60947-2		MP1 160		MP2 250	MP3 250				MP4 630		MP5 1600	
		E	B	F	F	N	H	L	F	H	N	H
Rated current of the shunt trips In (A)		16-25-50-63		100-160-200-250	6.3-12.5-25-32-50-80-100-160-220				400-500-630		800-1000	
Insulation voltage Ui (V)		800		800	800				800		1000	
Impulse withstand voltage Uimp (kV)		8		8	8				8		8	
Rated voltage (50/60 Hz) Ue (Vac)		690		690	690				690		690	
Extreme breaking capacity Icu (kA)	240 Vac	25	35	60	70	90	100	150	70	120	100	120
	415 Vac	16	25	36	36	50	70	100	36	70	50	70
	460 Vac	10	18	30	-	-	-	-	30	60	45	65
	500 Vac	8	10	25	16	18	30	22	25	40	35	45
	690 Vac	5	5	16	7	8	20	10	14	20	20	22
Service breaking capacity Ics (% Icu)		100	100	100	100	100	100	100	100	100	100	100
Rated closing capacity Icm (kA)	415 Vac	32	52.5	75.6	76.5	105	154	220	75.6	154	105	154
Protection against short circuit		10 In		5 to 10 In	5 to 10 In				5 to 10 In		5 to 10 In	
Category of use		A		A	A				A		A	
Aptitude for sectioning		yes		yes	yes				yes		yes	
Max No. of manoeuvres	mechanical	25000		20000	20000				15000		15000	
	electric	8000		8000	8000				5000		5000	
Protection index (front/clamps)		IP20/IP30		IP20/IP30	IP20/IP30				IP20/IP30		IP20/IP30	
Max. wiring section (mm^2)	flexible cable	70 (120 with item M7X07 and M7X17)		120	120				240		4x185	
	rigid cable	95 (150 with item M7X07 and M7X17)		150	150				300		4x240	
	busbar	19		28.5x8x8.5	28.5x8x8.5				32		50	
Dimensions LxHxD (mm)		26 (per pole) x 130 x 74		35 (per pole) x 165 x 74	105 (3P) / 140 (4P) x 165 x 86				43.5 (per pole) x 260 x 105		70 (per pole) x 320 x 140	

MEGATIKER

Technical features

FEATURES OF EARTH-LEAKAGE MODULES

	GS400-630	GL400-630
No. of poles	4	4
Type of earth-leakage module	A - S	A - S
Rated current In (A)	400 - 630	400 - 630
Rated voltage Ue (Vac at 50-60 Hz)	230-500	110-500
Insulation voltage Ui (Vac)	500	500
Operating voltage (Vac at 50-60 Hz)	230 to 500	110 to 500
Earth-leakage rated current IΔn (A)	0.03-0.3-1-3	0.03-0.3-1-3
Earth-leakage tripping time Δt (s)	0-0.3-1-3	0-0.3-1-3
Operating temperature (°C)	-25 to 70	-25 to 70
Earth-leakage breaking capacity IΔm (%Icu)	60	60
Remote signalling contact 50% IΔn	yes	-
Dispersed IΔn % signal	yes	-
Dimensions (LxHxD) (mm)	183x152x106	183x152x106

THERMAL (Ir) AND MAGNETIC (Ii) shunt trip current

THERMAL MAGNETIC		L1-L2-L3		N	
	In (A)	Ir	Ii	Ir	Ii
M1 160	16	12.8 to 16	400	12.8 to 16	400
	25	20 to 25	400	20 to 25	400
	40	32 to 40	400	32 to 40	400
	63	50.4 to 63	630	50.4 to 63	630
	80	64 to 80	800	50.4 to 63	630
	100	80 to 100	1000	50.4 to 63	630
	125	100 to 125	1250	64 to 80	800
	160	128 to 160	1600	80 to 100	1000
M2 250	100	80 to 100	500 to 1000	50.4 to 63	315 to 630
	160	128 to 160	800 to 1600	80 to 100	500 to 1000
	200	160 to 200	1000 to 2000	80 to 100	500 to 1000
	250	200 to 250	1250 to 2500	128 to 160	800 to 1600
M3 125/160	16	13 to 16	400	13 to 16	400
	20	16 to 20	400	16 to 20	400
	25	20 to 25	400	20 to 25	400
	32	26 to 32	400	26 to 32	400
	40	32 to 40	400	32 to 40	400
	50	40 to 50	500	40 to 50	500
	63	51 to 63	630	51 to 63	630
	80	64 to 80	800	64 to 80	800
	100	80 to 100	1000	80 to 100	1000
	125	100 to 125	1250	100 to 125	1250
	160	128 to 160	1600	128 to 160	1600
M3 250	16	13 to 16	400	13 to 16	400
	20	16 to 20	400	16 to 20	400
	25	20 to 25	400	20 to 25	400
	32	26 to 32	400	26 to 32	400
	40	32 to 40	400	32 to 40	400
	50	40 to 50	325 to 500	40 to 50	325 to 500
	63	51 to 63	315 to 630	51 to 63	315 to 630
	80	64 to 80	400 to 800	64 to 80	400 to 800
	100	80 to 100	500 to 1000	80 to 100	500 to 1000
	125	100 to 125	625 to 1250	100 to 125	625 to 1250
	160	128 to 160	800 to 1600	128 to 160	800 to 1600
	200	160 to 200	1000 to 2000	160 to 200	1000 to 2000
	250	200 to 250	1250 to 2500	200 to 250	1250 to 2500
M4 630	250	200 to 250	200 to 250	1250 to 2500	1250 to 2500
	320	256 to 320	256 to 320	1600 to 3200	1600 to 3200
	400	320 to 400	320 to 400	2000 to 4000	2000 to 4000
	500	400 to 500	400 to 500	2500 to 5000	2500 to 5000
	630	500 to 630	500 to 630	3150 to 6300	3150 to 6300
M5 1600	630	630	630	3150 to 6300	3150 to 6300
	800	800	800	4000 to 8000	4000 to 8000
	1000	1000	1000	5000 to 10000	5000 to 10000
	1250	1250	1250	6250 to 12500	6250 to 12500
ELECTRONIC		L1-L2-L3	N		
M5 1600	630	630	0-315-630	-	-
	800	800	0-400-800	-	-
	1000	1000	0-500-1000	-	-
	1250	1250	0-625-1250	-	-
	1600	1600	0-800-1600	-	-

TEMPERATURE DOWNGRADING

	In (A)	Ta (°C)											
		-25	-20	-10	-5	0	10	20	30	40	50	60	70
M1 125 MT	16	22	21	20	20	20	19	18	16	16	16	14	13
	25	34	33	32	31	31	30	28	25	25	25	22	21
	40	54	53	51	50	49	48	45	41	40	40	36	34
	63	85	83	81	79	78	76	71	65	63	63	58	55
	80	108	106	102	100	99	96	90	84	80	80	72	67
	100	135	132	128	126	123	120	112	102	100	100	94	90
	125	169	165	160	157	154	150	140	127	125	125	112	105
	160	216	211	205	201	197	192	179	160	160	160	128	104
M1 125 MT with earth leakage	16	23	22	21	21	20	19	18	17	16	16	15	14
	25	37	35	34	33	32	30	28	27	25	25	23	22
	40	55	54	52	51	50	47	43	43	40	40	36	35
	63	90	88	85	84	82	81	71	67	63	63	58	55
	80	115	113	111	109	107	97	87	83	80	80	74	71
	100	129	126	123	122	117	111	109	105	100	100	94	93
	125	159	157	154	152	149	138	134	131	125	125	112	110
	160	218	215	207	200	198	190	176	160	160	160	146	138
M2 250	100	135	132	128	126	123	120	112	102	100	100	90	84
	160	216	211	205	201	197	192	179	163	160	160	143	134
	200	270	264	256	251	246	240	224	203	200	200	179	168
	250	338	330	320	314	308	300	280	250	250	250	188	150
M2 250 electronic	40	-	-	-	-	-	-	-	-	40	40	34	30
	100	-	-	-	-	-	-	-	-	100	100	84	76
	160	-	-	-	-	-	-	-	-	160	160	134	122
	250	-	-	-	-	-	-	-	-	250	250	210	190
M3 125/160	16	-	20	20	19	19	18	17	17	16	16	15	14
	20	-	25	24	24	23	23	21	21	20	20	18	17
	25	-	31	30	30	29	28	27	26	25	25	23	22
	32	-	40	39	38	37	36	35	33	32	32	29	28
	40	-	50	49	48	47	45	43	42	40	40	37	35
	50	-	62	61	59	58	56	54	52	50	50	45	43
	63	-	79	77	75	74	71	68	65	63	63	57	54
	80	-	100	97	95	93	90	86	83	80	80	73	69
	100	-	125	121	119	117	112	108	104	100	100	91	86
	125	-	157	151	148	146	140	135	130	125	125	114	108
	160	-	201	193	189	187	179	173	166	160	160	146	138
M3 250	16	22	23	22	21	21	20	18	17	16	16	14	14
	20	29	29	27	26	26	24	23	21	20	20	18	17
	25	37	36	34	33	32	30	29	27	25	25	23	21
	32	47	46	44	42	41	39	37	34	32	32	29	27
	40	59	57	54	53	52	49	46	43	40	40	36	34
	50	74	72	68	66	64	61	57	54	50	50	45	43
	63	93	90	86	83	81	77	72	68	63	63	57	54
	80	118	114	109	106	103	98	92	86	80	80	72	68
	100	147	143	136	132	129	122	115	107	100	100	90	85
	125	184	179	170	166	161	152	143	134	125	125	113	106
	160	23.5	229	218	212	206	195	184	172	160	160	144	136
	200	294	286	272	265	258	244	230	215	200	200	180	170
	250	368	358	340	331	332	305	287	269	250	250	225	213
M4 630 MT	250	-	-	-	-	-	336	307	279	250	250	222	193
	320	-	-	-	-	-	416	384	352	320	320	288	256
	400	-	-	-	-	-	475	460	425	400	400	360	320
	500	-	-	-	-	-	600	550	525	500	500	455	410
	630	-	-	-	-	-	700	683	650	630	630	580	530
M4 630 electronic	250	-	-	-	-	-	250	250	250	250	250	225	200
	320	-	-	-	-	-	320	320	320	320	320	288	256
	400	-	-	-	-	-	400	400	400	400	400	360	320
	500	-	-	-	-	-	500	500	500	500	500	455	400
	630	-	-	-	-	-	630	630	630	630	630	567	504
M5 1600 MT	630	-	-	-	-	-	743	705	668	630	630	555	518
	800	-	-	-	-	-	944	896	848	800	800	704	656
	1000	-	-	-	-	-	1180	1120	1060	1000	1000	880	820
	1250	-	-	-	-	-	1475	1400	1325	1250	1250	1100	1025
M5 1600 electronic	500	-	-	-	-	-	500	500	500	500	500	475	450
	630	-	-	-	-	-	630	630	630	630	630	599	567
	800	-	-	-	-	-	800	800	800	800	800	760	720
	1000	-	-	-	-	-	1000	1000	1000	1000	1000	950	900
	1250	-	-	-	-	-	1250	1250	1250	1250	1250	1125	1063
	1600	-	-	-	-	-	1600	1600	1600	1600	1600	1440	1360

MEGATIKER

Technical features

POWER CONSUMPTION FOR EACH POLE AT RATED CURRENT (W)

THERMAL MAGNETIC																					
In (A)	16	20	25	32	40	50	63	80	100	125	160	200	250	320	400	500	630	800	1000	1250	1600
M1 160 (clamps)	3.1	-	5.7	-	6.6	-	10.6	6.7	8.5	9.2	13.7	-	-	-	-	-	-	-	-	-	-
M2 250 (cable glands)	-	-	-	-	-	-	-	-	7	-	12.5	15.1	19.1	-	-	-	-	-	-	-	-
M3 125/160 (Icu<50kA) (cable glands)	3.46	4.8	7.5	2.92	4.32	6.75	6.37	6.02	9.4	9.69	15.62	-	-	-	-	-	-	-	-	-	-
M3 125/160 (Icu<50kA) (front terminals)	3.48	4.84	7.56	3.02	4.48	7	6.77	6.66	1.04	11.25	18.18	-	-	-	-	-	-	-	-	-	-
M3 125/160 (Icu<50kA) (rear terminals)	3.55	4.94	7.72	3.28	4.88	7.63	7.76	8.26	12.9	15.16	24.58	-	-	-	-	-	-	-	-	-	-
M3 125/160 (Icu>50kA) (cable glands)	3.51	4.89	7.64	3.15	4.69	7.33	7.28	7.49	11.7	13.28	16.64	-	-	-	-	-	-	-	-	-	-
M3 125/160 (Icu>50kA) (front terminals)	3.54	4.93	7.71	3.26	4.85	7.58	7.68	8.13	12.7	14.84	19.20	-	-	-	-	-	-	-	-	-	-
M3 125/160 (Icu>50kA) (rear terminals)	3.6	5.03	7.86	3.51	5.25	8.2	8.67	9.73	15.2	18.75	25.6	-	-	-	-	-	-	-	-	-	-
M3 125/160 with earth leakage (cable glands)	3.47	4.82	7.54	2.98	4.42	6.9	6.61	6.4	10	10.63	15.62	-	-	-	-	-	-	-	-	-	-
M3 125/160 with earth leakage (front terminals)	3.5	4.86	7.6	3.08	4.58	7.15	7.01	7.04	11	12.19	18.18	-	-	-	-	-	-	-	-	-	-
M3 125/160 with earth leakage (rear terminals)	3.56	4.96	7.76	3.34	4.98	7.78	8	8.64	13.5	16.09	24.58	-	-	-	-	-	-	-	-	-	-
M3 250 (clamps)	2.99	4.47	5.34	4.99	7.67	5.76	9.45	7.22	7.77	12.73	11.8	14.89	21.21	-	-	-	-	-	-	-	-
M3 250 (cable glands)	2.73	4.08	6.38	4.56	7.01	5.26	8.63	6.59	7.1	11.63	10.78	13.6	19.38	-	-	-	-	-	-	-	-
M3 250 (front terminals)	2.3	3.44	4.11	3.84	5.9	4.43	7.27	5.55	5.98	9.79	9.08	11.45	16.32	-	-	-	-	-	-	-	-
M3 250 (rear terminals)	2.82	4.21	5.03	4.7	7.23	5.42	8.9	6.8	7.32	11.99	11.12	14.03	19.99	-	-	-	-	-	-	-	-
M3 250 with earth leakage (clamps)	3.29	4.91	5.87	5.49	8.44	6.33	10.39	7.94	8.55	14	12.98	16.38	23.33	-	-	-	-	-	-	-	-
M3 250 with earth leakage (cable glands)	3.01	4.49	7.01	5.02	7.71	5.78	9.49	7.25	7.81	12.79	11.86	14.96	21.31	-	-	-	-	-	-	-	-
M3 250 with earth leakage (front terminals)	2.53	3.78	4.52	4.22	6.49	4.87	7.99	6.11	6.58	10.77	9.98	12.6	17.95	-	-	-	-	-	-	-	-
M3 250 with earth leakage (rear terminals)	3.1	4.63	5.54	5.17	7.95	5.97	9.79	7.48	8.06	13.19	12.23	15.43	21.99	-	-	-	-	-	-	-	-
M4 630 (clamps or cable glands) [1]	-	-	-	-	-	-	-	-	-	-	-	-	19.2 (19.2)	16.4 (16.5)	25.6 (18.9)	28.7 (23.6)	37.3 (21.2)	-	-	-	-
M4 630 (external cable glands) [1]	-	-	-	-	-	-	-	-	-	-	-	-	19.9 (19.9)	17.6 (16.8)	27.5 (19.7)	30 (26.6)	42.1 (23.1)	-	-	-	-
M4 630 (front terminals) [1]	-	-	-	-	-	-	-	-	-	-	-	-	20.6 (20.6)	18.8 (17.1)	29.3 (20.4)	30.6 (28.2)	44.7 (24.1)	-	-	-	-
M4 630 (rear terminals) [1]	-	-	-	-	-	-	-	-	-	-	-	-	20.4 (20.4)	18.4 (17)	28.7 (20.2)	30.7 (28.5)	45 (24.3)	-	-	-	-
M4 630 (removable) [1]	-	-	-	-	-	-	-	-	-	-	-	-	26.7 (26.7)	28.8 (19.6)	44.9 (26.5)	53.9 (41.1)	85.3 (40.5)	-	-	-	-
M4 630 (with earth leakage) [1]	-	-	-	-	-	-	-	-	-	-	-	-	22.3 (22.3)	21.5 (17.7)	33.6 (22.1)	36.1 (33.8)	57.2 (28.2)	-	-	-	-
M5 1600 (front terminals)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	46.4	44.8	53	96.9	-
M5 1600 (rear terminals)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30.7	47.7	46.2	53.7	99.4	-
M5 1600 (front terminals) draw-out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52.3	81	78.1	92	170.3	-
M5 1600 (rear terminals) draw-out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38.5	59.9	57.6	68	125	-
ELECTRONIC																					
M2 250	-	-	-	-	2.4	-	-	-	2.6	-	6.66	-	16.25	-	-	-	-	-	-	-	-
M2 250 removable	-	-	-	-	3.18	-	-	-	5	-	12.8	-	31.25	-	-	-	-	-	-	-	-
M3 250	-	-	-	-	2.4	-	-	-	3	-	7.68	-	18.75	-	-	-	-	-	-	-	-
M3 250 draw-out	-	-	-	-	2.59	-	-	-	4.2	-	10.75	-	26.25	-	-	-	-	-	-	-	-
M4 630	-	-	-	-	-	-	-	-	-	-	-	-	7.5	12.3	19.2	22.1	35	-	-	-	-
M5 1600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.6	18.5	29.8	47.6	74.4	65.3
EARTH-LEAKAGE MODULES																					
G400 to 630	-		-		-		-	-	-	-	-	-	1.25	2.05	3.2	5	7.84	-	-	-	-
ONLY MAGNETIC CIRCUIT BREAKERS																					
MP1 160	0.1	-	0.2	-	-	0.9	1.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MP2 250	-	-	-	-	-	-	-	-	3	-	7.7	12	18.8	-	-	-	-	-	-	-	-
MP4 630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.2	22.1	35	-	-	-	-
MP5 1600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29.8	47.6	-	-

(1) values in brackets refer to the NEUTRAL pole

MEGATIKER

Technical features of the MEGATIKER and MEGASWITCH disconnectors

TECHNICAL FEATURES OF THE MEGATIKER DISCONNECTORS

Compliance with standards CEI EN 60947-3		MS1 160	MS2 250	MS3 125	MS3 250	MS4 630	MS5 1600
Rated current Ie (A)		160	250	125	250	400-630	630-800-1250-1600
Category of use		AC23A	AC22-23A	AC23A	AC23A (In <= 225A) - AC22A (In=250A)	AC23A (400A) - AC22A (630A)	AC23A
Insulation voltage Ui (V)		800	800	800 (500 with earth leakage)	800 (500 with earth leakage)	800	1000
Rated voltage (50/60 Hz) Ue (Vac)		690	690	690 (500 with earth leakage)	690 (In=160 A - 200 A - 250 A) - 415 (In=225 A) (500 with earth leakage in AC22A and 415 with earth leakage in AC23A)	690	690
Impulse withstand voltage Uimp (kV)		8	8	8	8	8	8
Rated short-time current Icw (kA) for 1s		2	3	1.5	3	5 (400A) - 8 (630A)	10
Rated closing capacity Icm (kA) at 415 Vac		3	4.5	2.5	4.3	8(400A) - 14 (630A)	17 (630-800A) - 40 (1250-1600A)
Power consumption for each pole (W)		137	19.1	7.81 (cable glands) 9.38 (front terminals) 13.28 (rear terminals)	14.84 (clamps) 13.55 (cable glands) 11.41 (front terminals) 13.98 (rear terminals)	25.6 (400A) 37.3 (630A) (clamps or cable glands)	49.6 (630A) - 29.4 (800A) - 73.4 (1250A) - 58.9 (1600A)
Max No. of manoeuvres	mechanical	25000	20000	20000	12000	20000	10000
	electric	8000	8000	8000	6000	4000	4000
Protection index (front/clamps)		IP20/IP30	IP20/IP30	IP20/IP30	IP20/IP30	IP20/IP30	IP20/IP30
Dimensions (LxHxD) (mm)		26 (per pole) x 130 x 97	35 (per pole) x 165 x 100	25 (per pole) x 135 x 86	35 (per pole) x 165 x 86	42 (per pole) x 260 x 105	70 (per pole) x 320 x 140

TECHNICAL FEATURES OF THE MEGASWITCH DISCONNECTORS

Compliance with standards CEI EN 60947-3		MW63	MW160			MW250			MW630				MW1600			
Rated voltage Ue (Vac)		690	690			690			690				690			
Rated insulating voltage Ui (Vac)		690	690			690			690				690			
Rated impulse withstand voltage Uimp (kV)		8	8			8			8				8			
Rated current Iu (A) at 40°C		63	100	160	250	160	200	250	320	400	500	630	800	1000	1250	1600
Operating current Ie (A) in AC22A	400 Vac	63	100	125	160	-	-	-	-	-	-	-	-	-	-	-
	500 Vac	63	100	125	125	-	-	-	-	-	-	-	-	-	-	-
	690 Vac	40	100	125	125	-	-	-	-	-	-	-	-	-	-	-
Operating current Ie (A) in AC23A	400 Vac	63	100	125	160	160	200	250	320	400	500	630	800	1000	1250	1600
	500 Vac	63	100	125	125	-	-	-	-	-	-	-	-	-	-	-
	690 Vac	40	100	125	125	160	160	160	320	400	500	630	800	1000	1250	1600
Operating current Ie (A) in DC23A	250 Vdc*	-	100	125	125	160	200	250	320	400	500	630	800	1000	1250	1600
Maximum current of the gG fuse (A)		63	100	125	160	160	200	250	320	400	500	630	800	1000	1250	1600
Maximum current of the aM fuse (A)		63	63	125	125	160	200	250	320	400	500	630	800	1000	1250	1600
Rated closing capacity Icm (kA) (peak value)		7	12	12	12	24	24	24	24	24	24	24	40	40	40	40
Rated short-time current Icw (kA) for 1s		2.5	3.5	3.5	3.5	12	12	12	12	12	12	12	20	20	20	20
Conditioned short-circuit current Icc (kA) (with fuse)		100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
No. of mechanical manoeuvres		>30000				25000			15000				10000			
No. of electrical manouevres (AC23-400Vac)		>30000				2500			1500				2000			
Power consumption for each pole (W)		0.8	2	2.5	5	5	7	12	8	13	20	32	9.6	15	15.6	25.6
Protection index		IP20	IP20			IP20			IP20				IP20			
Max. section of connectable cable/busbar (mm^2)**	Flexible Cu	35	50			150			1x240 or 2x185				2x185 or 4x185			
	Rigid Cu	50	70			185			1x300 or 2x240				2x240 or 4x240			
	Al	50	70			185			1x300 or 2x240				2x240 or 4x240			
Busbar width (mm)		-	-			28			30				50			
Dimensions of the fixed circuit breaker (LxHxD) (mm)	3P	160x91x91	133x91x91			195x138x114.4			265x200x143				210x320x207			
	4P	160x91x91	160x91x91			195x138x114.4			265x200x143				210x320x207			

* two poles in series ** depending on the type of terminal/clamp used

COORDINATION BETWEEN UPSTREAM CIRCUIT BREAKERS AND DOWNSTREAM DISCONNECTORS (415 V)

	M1 160		M2 250		M3 125/160				M3 250				M4 630 MT			M4 630 ELE			M5 1600 MT			M5 1600 ELE		
	E	B	B	F	F	N	H	L	F	N	H	L	F	N	L	F	N	L	N	H	L	N	H	L
MS1 160	16	25	25	36	36	50	50	50	36	50	50	50	36 (320A)	50 (320A)	50 (320A)	36	50	50	-	-	-	50	50	50
MS2 250	16	25	25	36	36	50	70	70	36	50	70	70	36 (500A)	50 (500A)	70 (500A)	36	50	70	-	-	-	50	70	70
MS3 125	16	25	25	36	36	50	50	50	36	50	50	50	36 (320A)	50 (320A)	50 (320A)	36	50	50	-	-	-	50	50	50
MS3 250	16	25	25	36	36	50	50	50	36	50	50	50	36 (500A)	50 (500A)	50 (500A)	36	50	50	-	-	-	50	50	50
MS4 630	16	25	25	36	36	50	70	100	36	50	70	100	36	50	100	36	50	100	50 (1000A)	70 (1000A)	100 (1000A)	50	70	100
MS5 1600	16	25	25	36	36	50	70	100	36	50	70	100	36	50	100	36	50	100	50*	70*	100*	50*	70*	100*
MW63	12.5	12.5	12.5	12.5	16	16	25	25	16	16	16	16	12	12	12	12	12	12	8	8	8	8	8	8
MW160	12.5	12.5	12.5	12.5	16	16	25	25	16	16	16	16	12	12	12	12	12	12	8	8	8	8	8	8
MW250	16	25	25	36	36	50	70	70	36	50	70	70	22	22	22	22	22	22	12	12	12	12	12	12
MW630	16	25	25	36	36	50	70	100	36	50	70	100	30	30	30	30	30	30	16	16	16	16	16	16

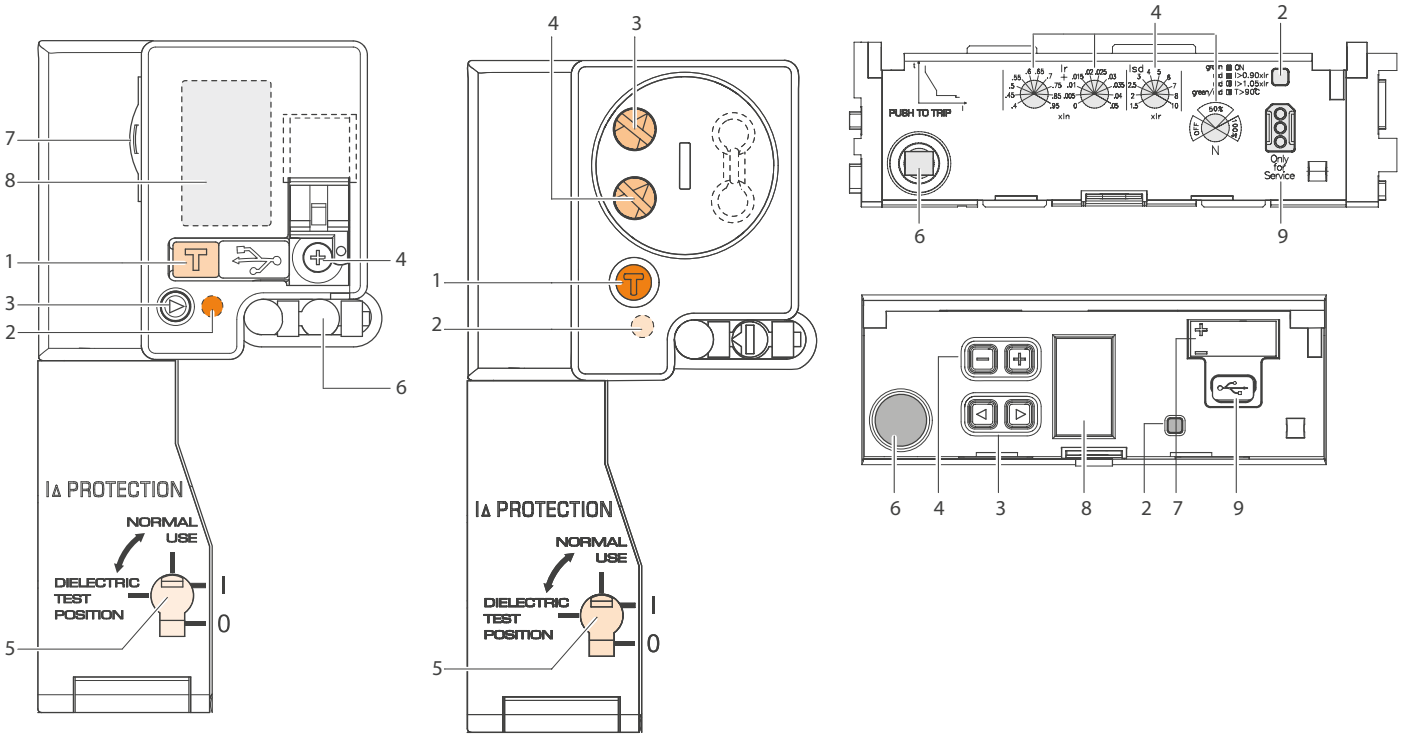
* MS5 with Ie max. 1000A

COORDINATION BETWEEN DISCONNECTORS AND FUSES gGAND AM (415 V)

		Imax fuse (A)		Icu (kA)	
	Ith (A)	gG	aM	gG	aM
MS1 160	160	100	100	50	50
MS2 250	250	160	160	50	50
MS3 125	125	80	80	50	50
MS3 250	250	160	160	50	50
MS4 400	400	200	250	100	100
MS4 630	630	250	320	100	100
MS5 630	630	400	400	100	100
MS5 1000	1000	500	500	100	100

MEGATIKER

Electronic protection unit



LEGEND
1 - Earth leakage TEST key
2 - Notification LED
3 - Navigation pushbutton
4 - Setting pushbutton
5 - Mechanical release selector / dielectric test
6 - Mechanical test key
7 - Battery housing
8 - Display
9 - Communication port

TWO-COLOUR LED NOTIFICATIONS		
Notification	**Event**	**Priority**
Green LED ON	IΔn below the threshold	3
Green LED flashing	Adjustment not correct - Adjustment in progress	3
Red LED ON	IΔn greater than 45% of the set threshold	3
Red LED flashing	IΔn greater than 60% of the set threshold	3
Green and red LEDs flashing in alternation	Temperature > 85°C	1

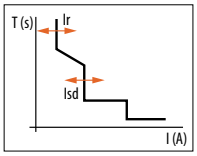
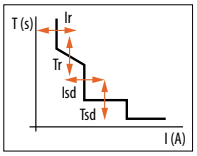
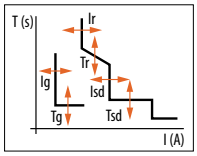
ADJUSTMENTS OF ELECTRONIC CIRCUIT BREAKERS

		M2 250	M3 250	M4 630	M5 1600
Type of protection		Lsi	Li -Lsi-Lsig	Li	Li
Protection against overload	Ir (x In)	0.4 to 1 (1A step)	0.4-0.5-0.6-0.7-0.8-0.9-0.95-1	0.4-0.45-0.5-0.55-0.6-0.65-0.7-0.75-0.85-0.95-1	0.4 to 1 In (1A step)
	Tr (s) (at 6I r)	3-5-10-15	5 (for Li version) 5-10-20-30 (mem OFF/ON) (for Lsi and Lsig version)	5	-
Protection against short circuit	Isd (x Ir)	1.5-2-2.5-3-4-5-6-7-8-9-10	1.5-2-2.5-3-4-5-6-8-10	1.5-2-2.5-3-4-5-6-7-8-10	1.5-2-2.5-3-4-5-6-7-8-9-10
	Tsd (s)	0-0.1-0.2-0.3-0.4-0.5	0.1 (for Li version) 0-0.1-0.2-0.3 (for Lsi and Lsig version)	0.1	-
	Tsd (t=k)	0.01-0.1-0.2-0.3-0.4-0.5 (at 12Ir)	0.01-0.1-0.2-0.3 ((at 12Ir)	0.01-0.1-0.2-0.3 (at 12Ir)	-
Earth-leakage protection	IΔn (A)	0.03-0.3-1-3	0.03-0.3-1-3	see earth-leakage modules	-
	Δt (s)	0-0.3-1-3	0-0.3-1-3		-
Protection against earth fault	Ig (xIr)	0.2-0.3-0.4-0.5-0.6-0.7-0.8-1-OFF	0.2-0.3-0.4-0.5-0.6-0.7-0.8-1-OFF (only Lsig)	0.2-0.3-0.4-0.5-0.6-0.7-0.8-1-OFF	-
	Tg (s) (t=k)	0.1-0.2-0.5-1	0.1-0.2-0.5-1	0.1-0.2-0.5-1	-
Neutral protection	N	0-50-100-150-200%	0-50-100-150-200%	0-50-100-150-200%	0-50-100-150-200%
Fixed instantaneous trip (kA)	Isf	-	3	-	10 kA (630-800A) - 15 kA (1250A) - 20 kA (1600A)

MEASUREMENT

Current	I1 - I2 - I3 - IN
Voltage	U1 - U2 - U3 - V1N - V2N - V3N
Energy	Ep - Eq (bidirectional)
THD	THDV - THDI - 123 - 132
Power factor	Pf
Frequency	Hz
Power	Ptot - Qtot

TYPE OF ELECTRONIC PROTECTION

Li	Lsi	Lsig
		

MEGATIKER

Operating features in special conditions

FEATURES ACCORDING TO THE ROOM TEMPERATURE

Operating temperature: from -25°C to +70°C
Closure guaranteed: up to -10 °C
Storage temperature: from -25°C to +85°C (circuit breakers);
from -40°C to +85°C (disconnectors).

OPERATING FEATURES IN PARTICULAR WEATHER CONDITIONS

MEGATIKER circuit breakers conform to the following the standards:
- IEC 68-2-1: holding at low temperatures;
- IEC 68-2-2: hot dry climate;
- IEC 68-2-30: hot humid climate (temperature +55°C, relative humidity 95%);
- IEC 68-2-52: saline mist.

MEGATIKER circuit breakers are designed to operate under particularly harsh environmental conditions as defined by IEC 60947 standards (pollution level ≤ 4). For the circuit breakers to be used correctly, it is recommended that they be installed in panels and cabinets with a degree of protection appropriate for the surrounding environment and with adequate ventilation.

OPERATING FEATURES IN CASE OF VIBRATIONS

MEGATIKER circuit breakers are insensitive to vibrations of mechanical or electromagnetic origin. Excessive vibration could lead to untimely circuit breaker releases or breakage of mechanical parts.

ELECTROMAGNETIC DISTURBANCES

MEGATIKER circuit breakers are insensitive to overvoltage produced by electromechanical control and protection devices. They are also insensitive to mains voltage surges caused by atmospheric disturbances, to disturbances caused by radio wave emitting equipment and to electrostatic discharges. The circuit breakers have undergone EMC Electromagnetic Compatibility tests in accordance with IEC EN 60947-2.

DOWNGRADING ACCORDING TO ALTITUDE

When used at altitudes of up to 2000 metres, MEGATIKER circuit breakers show no change in performance. For higher altitudes, the following table applies. As the altitude increases, the properties of the atmosphere change in terms of composition, dielectric strength, cooling power and pressure, so the performance of the circuit breakers is downgraded. These downgrades refer to changes in terms of maximum rated operating voltage and rated uninterrupted current.

DOWNGRADING TABLE ACCORDING TO ALTITUDE

	CIRCUIT BREAKERS				CIRCUIT BREAKERS + EARTH LEAKAGE			
	3P-4P				3P-4P			
Altitude (m)	<2000	3000	4000	5000	<2000	3000	4000	5000
Ue (V)	690	590	520	460	500	430	380	330
In (A)	In	0.98 x In	0.93 x In	0.9 x In	In	0.98 x In	0.93 x In	0.9 x In

CIRCUIT BREAKER OPERATION AT A FREQUENCY OF 400 Hz

Thermal-magnetic circuit breakers can operate at a frequency of 400 Hz. As the frequency increases, the cross-sectional area of the conductor affected by the current flow decreases (skin effect). Hysteresis losses due to eddy currents of adjacent ferromagnetic materials also increase. For this reason, devices may be restricted in their use due to the temperature increase caused by the frequency.

THERMAL TRIPPING

The thermal shunt trip can operate at currents lower than the operating current of 50 Hz. Therefore, a thermal downgrading of the device is necessary, to be calculated using the downgrading coefficients given in the table below.

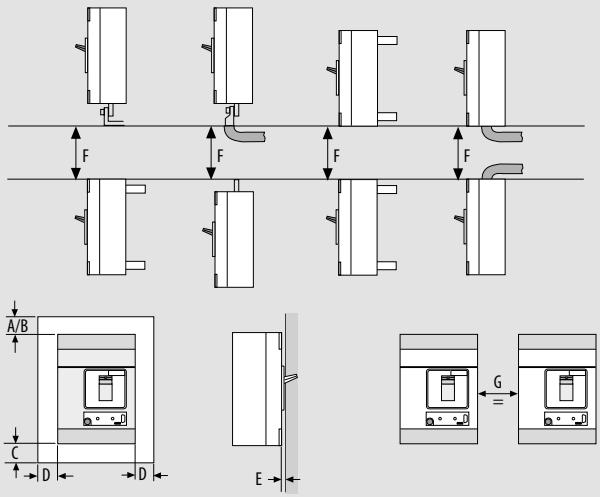
MAGNETIC TRIPPING

The magnetic shunt trip triggers with currents higher than the 50 Hz operating current. It is necessary to calculate the magnetic trip value at 400 Hz using the increase coefficients provided by the manufacturer.

CORRECTION COEFFICIENTS AT 400 Hz

Switch	Overload			Short circuit		
	In	Kt	In	Im	Km	Im
	(50Hz)		(400Hz)	(50Hz)		(400Hz)
M1 160	25	1	25	90 to 250	2	180 to 500
M2 250	63	0.95	60	220 to 630	2	440 to 1250
	100	0.95	95	350 to 1000	2	700 to 2000
	160	0.9	145	560 to 1600	2	1120 to 3200
	250	0.85	210	900 to 2500	2	1800 to 5000
M4 630	250	0.85	213	1250 to 2500	1	1250 to 2500
	320	0.85	272	1600 to 3200	1	1600 to 3200
	400	0.8	320	2000 to 4000	1	2000 to 4000
	500	0.8	400	2500 to 5000	1	2500 to 5000
	630	0.8	504	3200 to 6300	1	3200 to 6300
M5 1600	500	0.6	300	2500 to 5000	1	2500 to 5000
	630	0.6	380	3200 to 6300	1	3200 to 6300
	800	0.6	480	4000 to 8000	1	4000 to 8000
	1000	0.6	600	3000 to 6000	1	3000 to 6000
	1250	0.6	750	3800 to 7500	1	3800 to 7500

$Kt = \frac{In\ (400Hz)}{In\ (50Hz)}$ $Km = \frac{Im\ (400Hz)}{Im\ (50Hz)}$

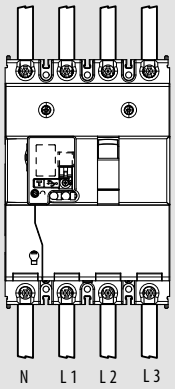


Min. installation distances (mm)

Circuit breakers	In (A)	A (to earth)	Wall B (insulating)	C (to earth)	Side D (metal)	Door E (panel)	Spacing F	G
M1 160 - M3 125	16÷160	60	30	20	20	0	100	0
M2 250	100÷250	60	30	20	20	0	100	0
M3 250	25÷250	70	25	25	25	0	140	0
M4 630E	160÷630	70	25	25	25	0	160	0
M5 1600	500÷1600	90	40	40	40	0	160	0

Earth-leakage protection diagrams

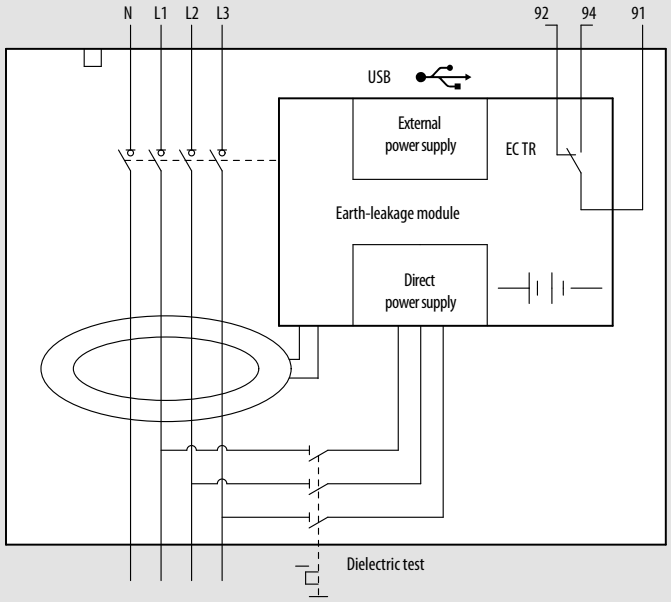
INTERNAL DIAGRAM OF CIRCUIT BREAKERS WITH INTEGRATED EARTH-LEAKAGE MODULE



TIME/CURRENT ADJUSTMENTS

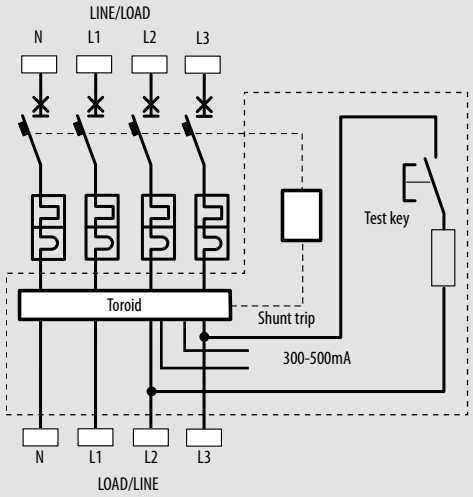
Δt (s)	IΔn (A)			
	0.03	0.3	1	3
0	OK	OK	OK	OK
0.3	no	OK	OK	OK
1	no	OK	OK	OK
3	no	OK	OK	OK

Factory settings

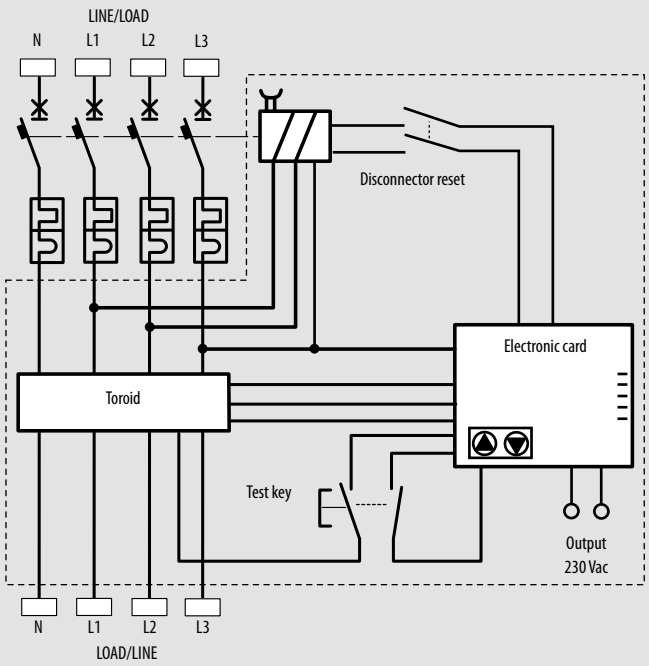


INTERNAL DIAGRAM OF DIFFERENTIAL MODULES

GS TYPE



GL TYPE

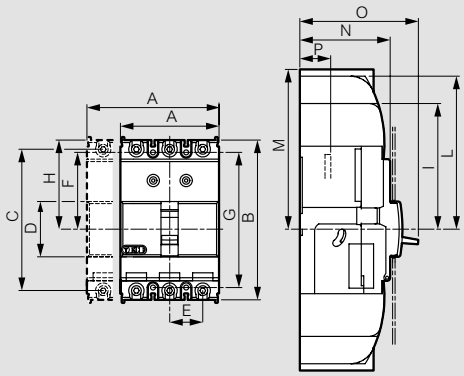


M1 160

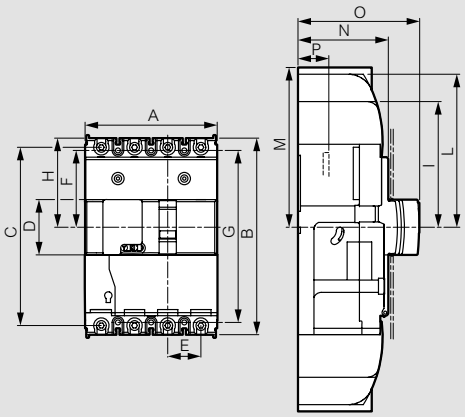
Dimensions

M1 160 THERMAL MAGNETIC

Fixed version

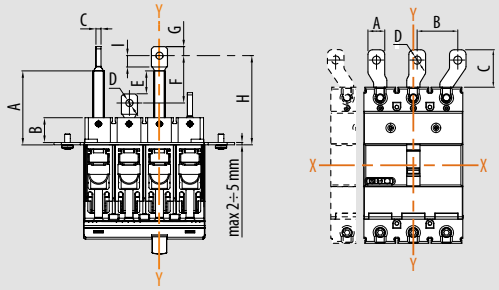


Fixed version with earth-leakage module

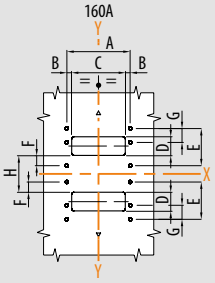


	A	B	C	D	E	F	G	H	I	L	M	N	O	P
3P	81	130	115	45	27	62.5	110	72.5	102.5	125	-	74	100	18
4P	108	130	115	45	27	62.5	110	72.5	102.5	125	-	74	100	18
4P+D	108	160	145	45	27	62.5	140	72.5	102.5	125	-	74	100	18

FRONT AND REAR TERMINALS

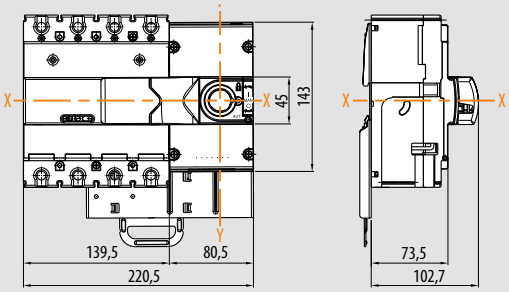


	A	B	C	D	E	F	G	H
3P-4P	136	10.5	115	40	80	22	30	79
4P+D	136	10.5	115	40	80	22	30	109

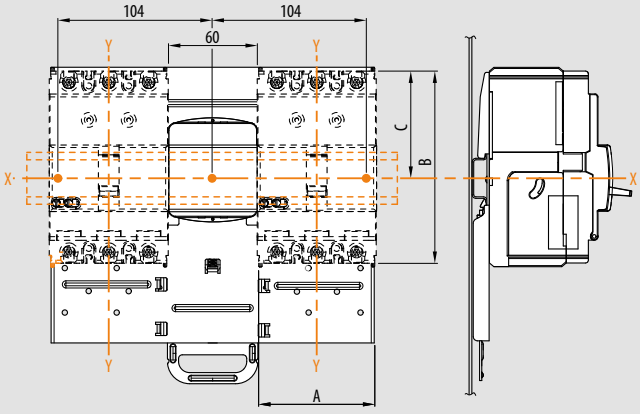


	A	B	C	D
3P-4P	17.5	35	41	8.5

MOTOR CONTROLS

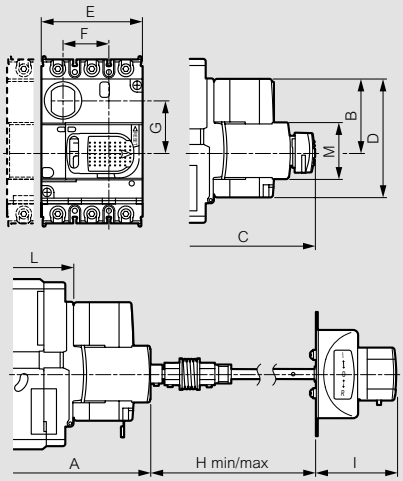


MECHANICAL INTERLOCKS



	A	B	C
3P	81	130	72.5
4P	108	130	72.5
4P EARTH LEAKAGE	108	160	72.5

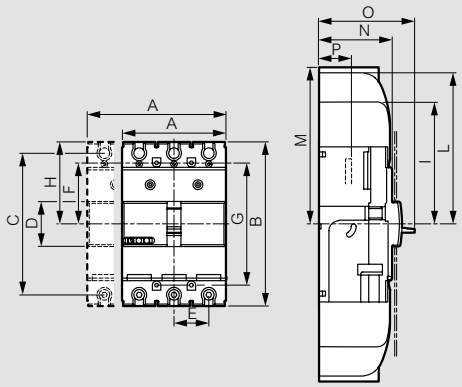
ROTARY HANDLES



	A	B	C	D	E	F	G	H min	H max	I	L	M
3P-4P	122	57	155	94	80.5	36.5	41.7	132	361	62	74	45
4P+D	122	57	155	94	93	36.5	41.7	132	361	62	74	45

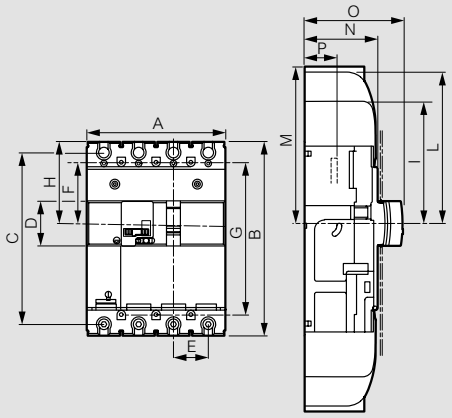
M2 250 THERMAL MAGNETIC WITH ELECTRONIC SHUNT TRIP

Fixed version

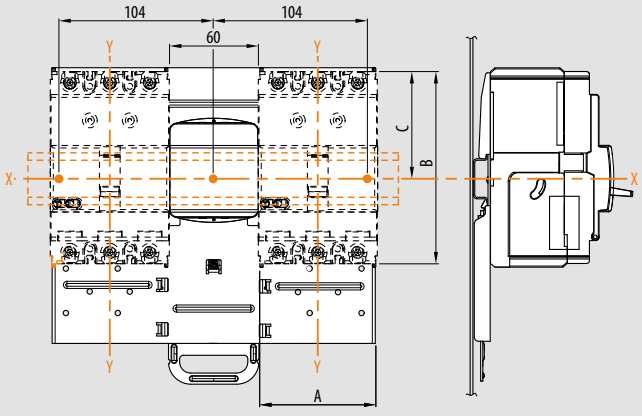


	A	B	C	D	E	F	G	H	I	L	M	N	O	P
3P	105	165	142.5	45	35	61.5	123	82.5	112.5	150	-	74	100	18
4P	140	165	142.5	45	35	61.5	123	82.5	112.5	150	-	74	100	18
4P+D	140	195	172.5	45	35	61.5	153	82.5	112.5	150	-	74	100	18

Fixed version with earth-leakage module

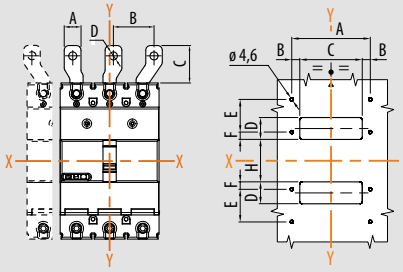


MECHANICAL INTERLOCKS



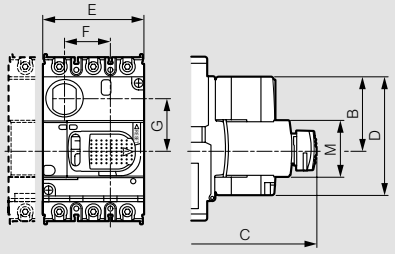
	A	B	C
3P	105	165	82.5
4P	140	165	82.5
4P EARTH LEAKAGE	140	195	82.5

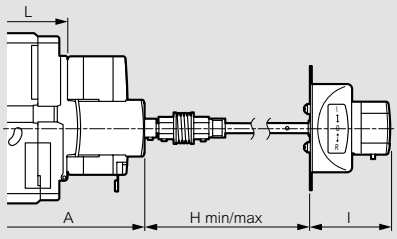
FRONT AND REAR TERMINALS



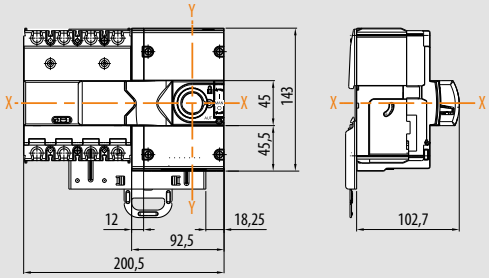
	A	B	C	D
3P-4P	33	48.5	54.75	13

ROTARY HANDLES





MOTOR CONTROLS

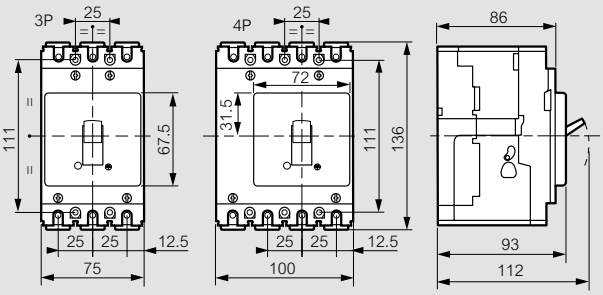


	A	B	C	D	E	F	G	H min	H max	I	L	M
3P-4P	122	57	155	94	80.5	40.5	41.7	132	361	62	74	45
4P+D	122	57	155	94	93	40.5	41.7	132	361	62	74	45
electronic	122	57	155	94	93	40.5	41.7	132	361	62	74	45
4P+D electronic	122	57	155	94	93	40.5	41.7	132	361	62	74	45

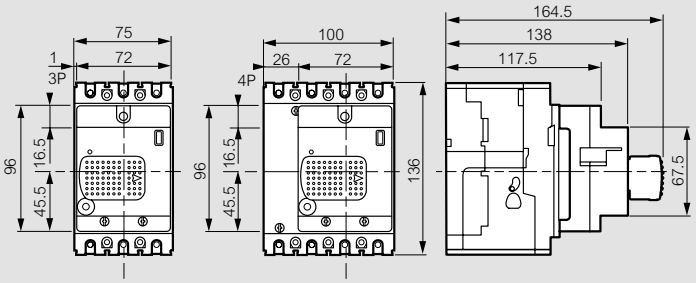
M3 125/160

Dimensions

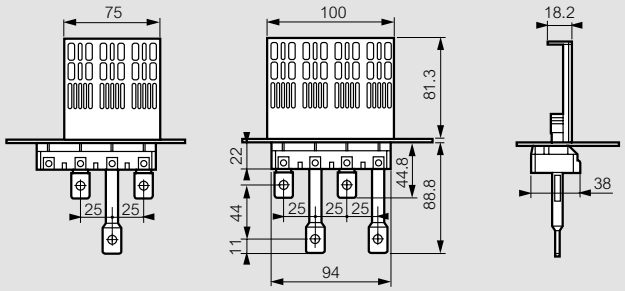
FIXED VERSION, FRONT TERMINALS



DIRECT ROTARY HANDLES

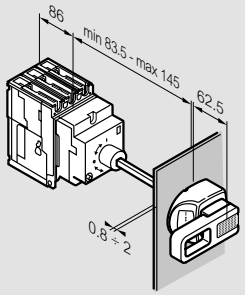


FIXED VERSION, REAR TERMINALS

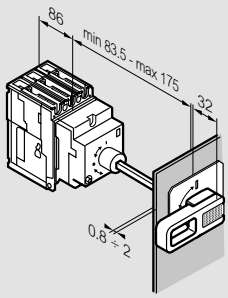


VARY-DEPTH ROTARY HANDLES

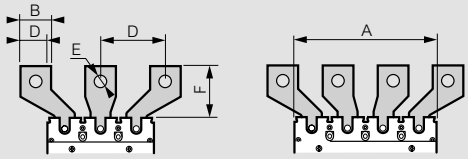
IP 55



IP 40

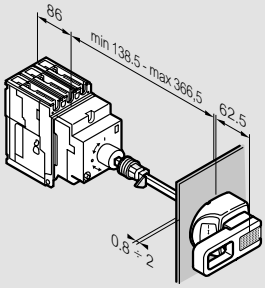


FRONT TERMINALS

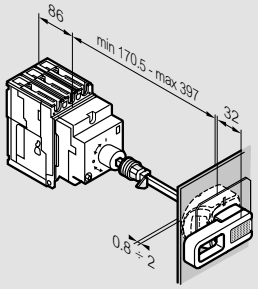


	A	B	C	D	E	F
3P	75	22	10	35.7	10.2	32
4P	100	22	10	35.7	10.2	32

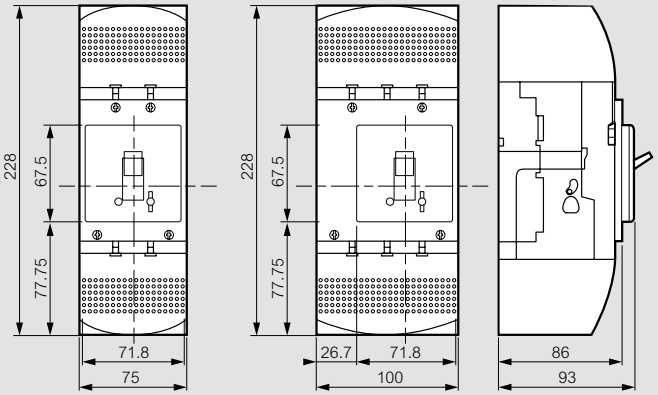
IP 55



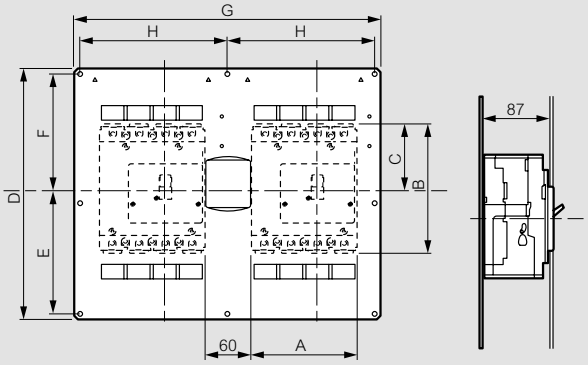
IP 40



CLAMP PROTECTION COVERS



MECHANICAL INTERLOCK

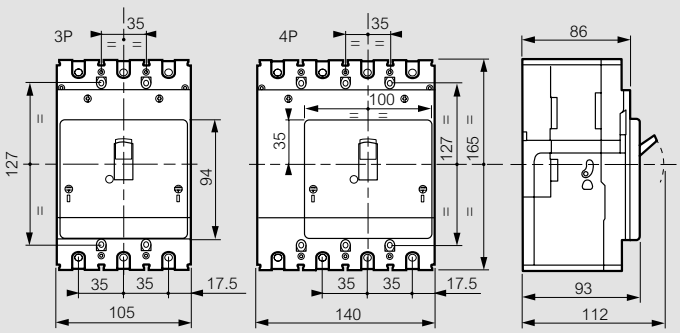


	A	B	C	D	E	F	G	H
3P	75	136	68	290	140	135	315	150
4P	100	136	68	290	140	135	315	150

M3 250

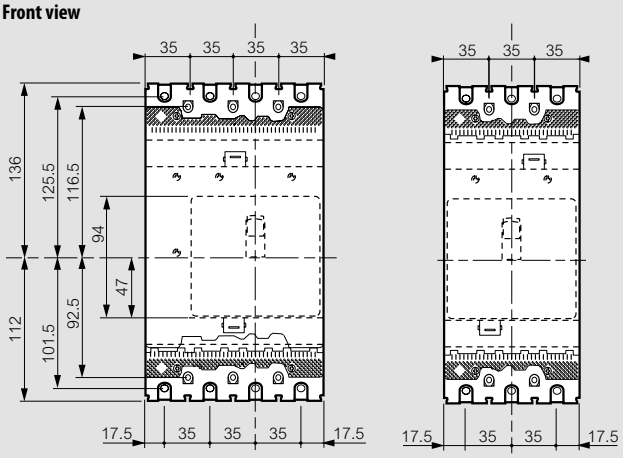
Dimensions

FIXED VERSION, FRONT TERMINALS

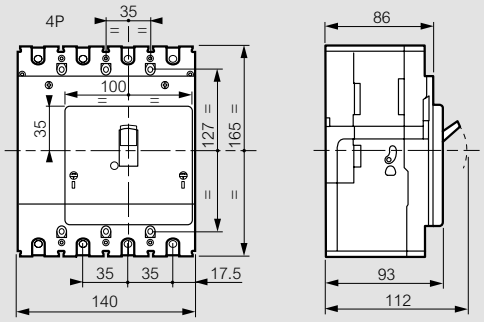


REMOVABLE VERSION, FRONT TERMINALS

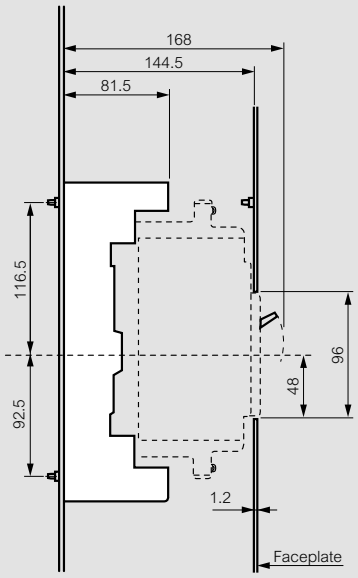
Front view



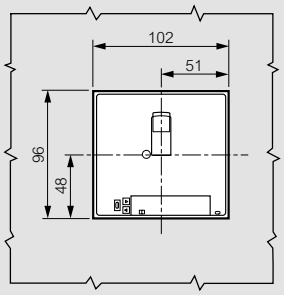
FIXED VERSION, ELECTRONIC EARTH-LEAKAGE MODULE



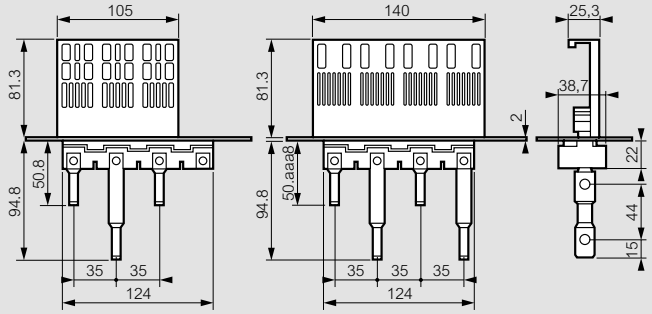
SIDE VIEW WITH PANEL



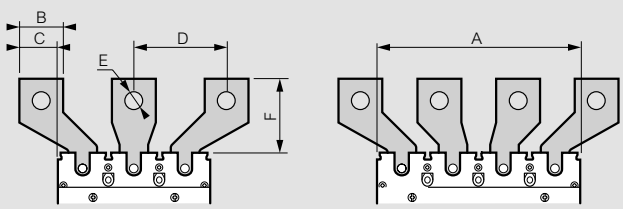
FRONT VIEW WITH PANEL



FIXED VERSION, REAR TERMINALS

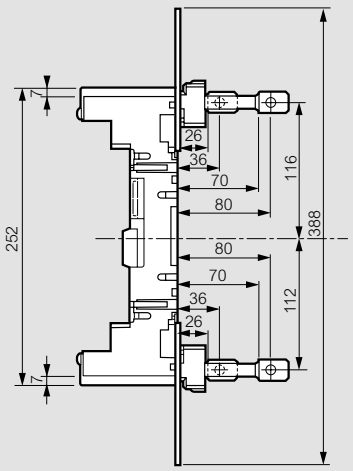


FRONT TERMINALS



	A	B	C	D	E	F
3P	105	30	27	63.5	13	50
4P	140	30	27	63.5	13	50

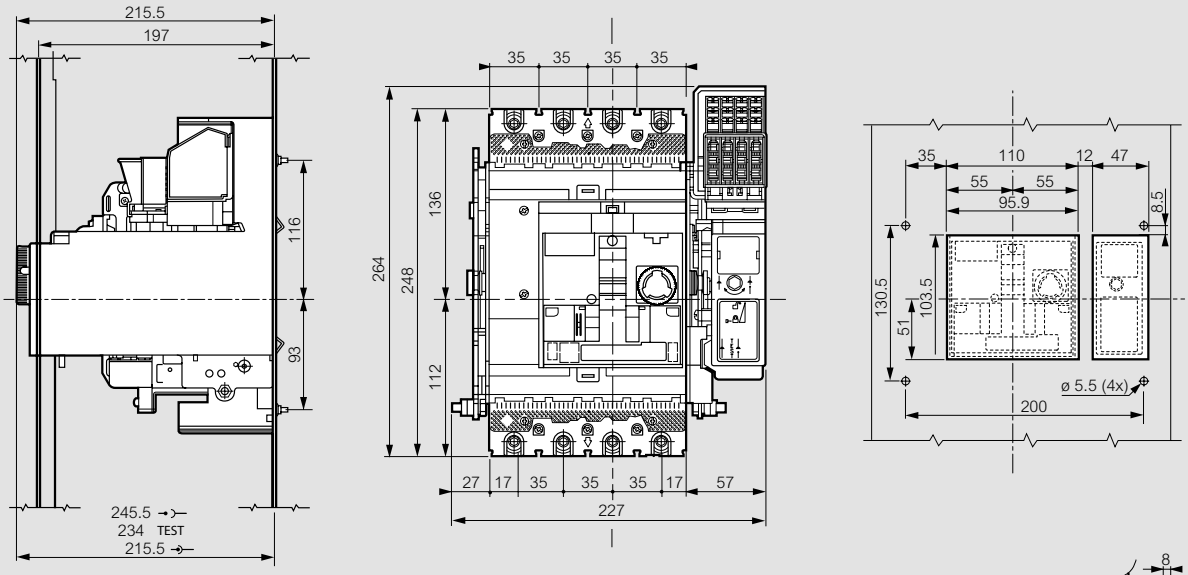
REMOVABLE BASE WITH REAR TERMINALS



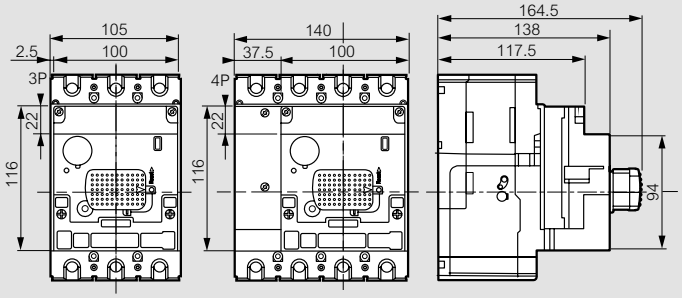
M3 250

Dimensions

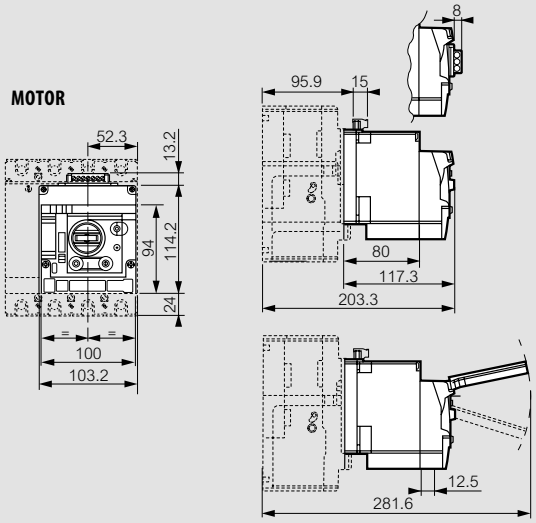
DRAW-OUT VERSION



DIRECT ROTARY HANDLES

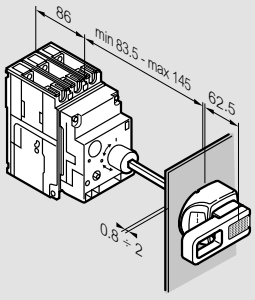


MOTOR

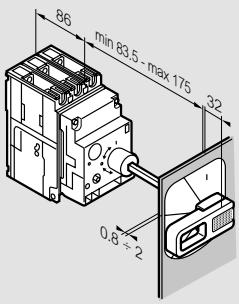


VARY-DEPTH ROTARY HANDLES

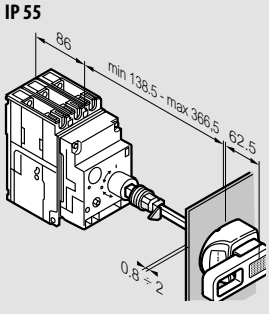
IP 55



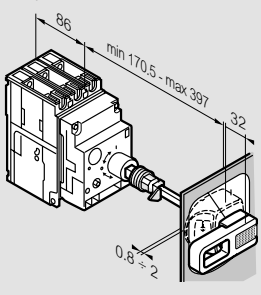
IP 40



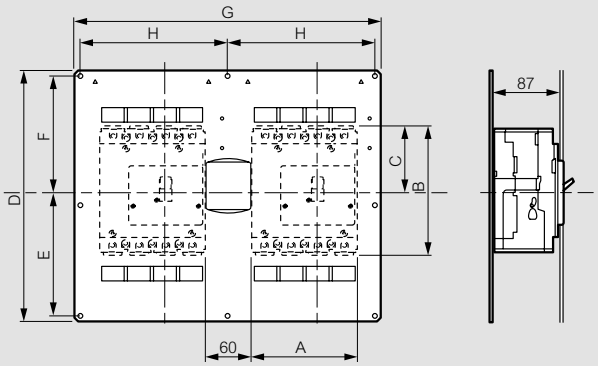
IP 55



IP 40



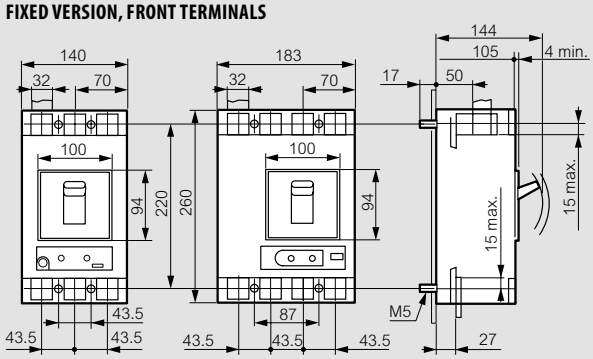
MECHANICAL INTERLOCK



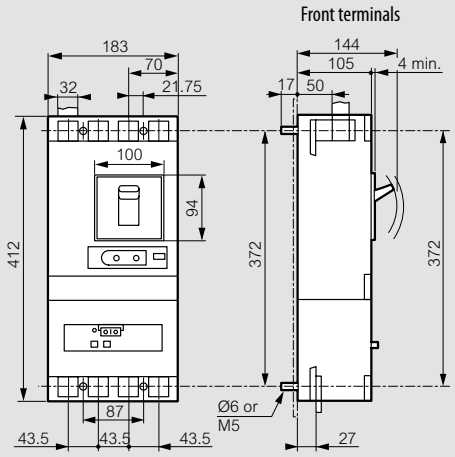
	A	B	C	D	E	F	G	H
3P	105	165	82.5	340	165	160	415	200
4P	140	165	82.5	340	165	160	415	200

Dimensions

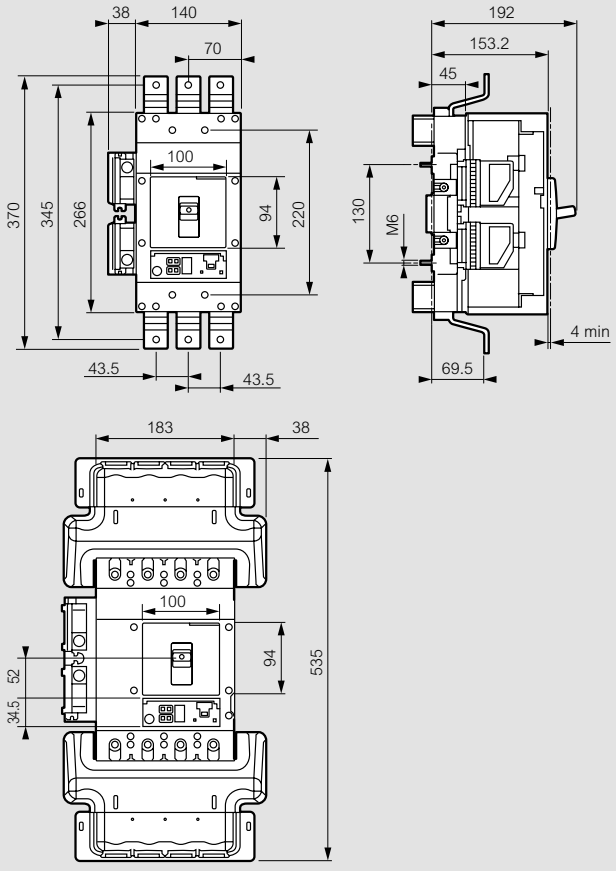
FIXED VERSION, FRONT TERMINALS



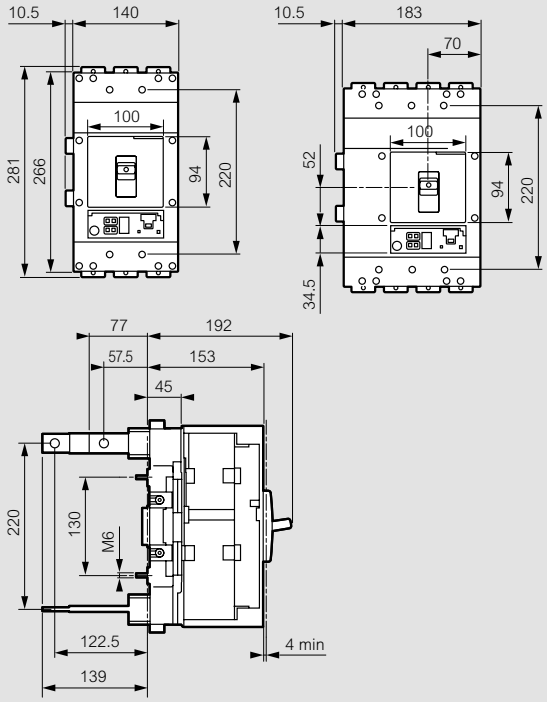
FIXED VERSION WITH UNDERNEATH EARTH-LEAKAGE MODULE



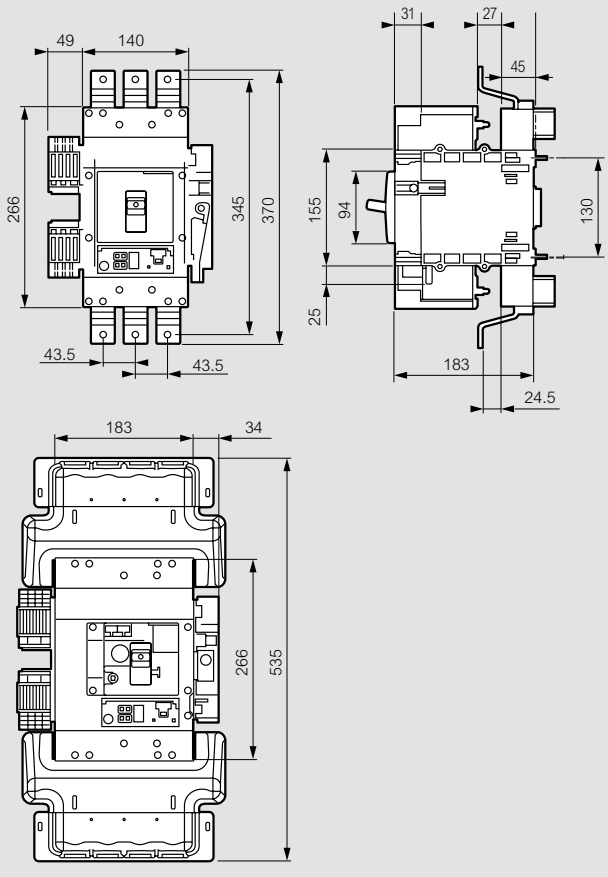
REMOVABLE VERSION, FRONT TERMINALS



REMOVABLE VERSION, REAR TERMINALS



DRAW-OUT VERSION, FRONT TERMINALS



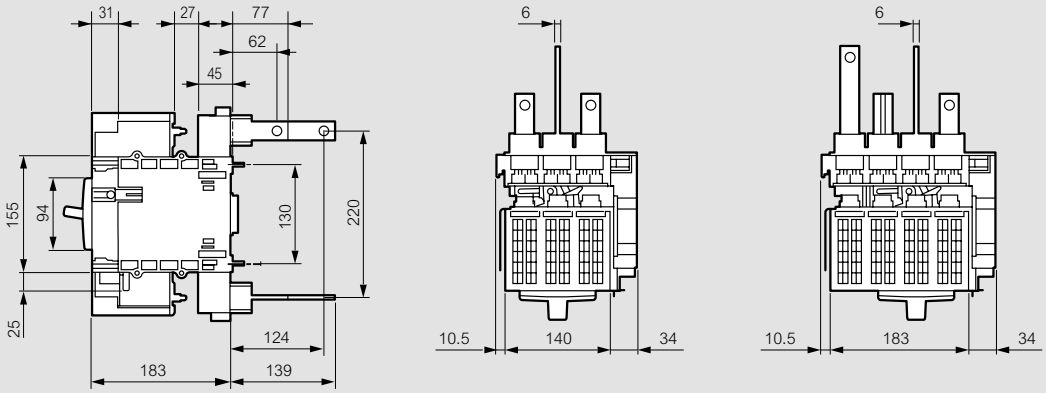
1: 75 mm with mechanical system

M4 630

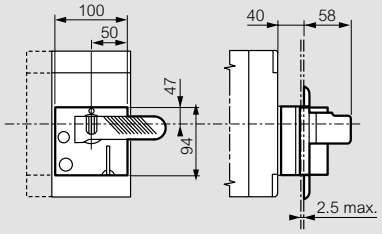
Dimensions

DRAW-OUT VERSION, REAR TERMINALS

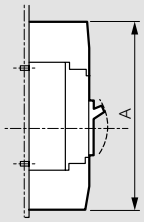
Flat rear terminals



DIRECT ROTARY HANDLES

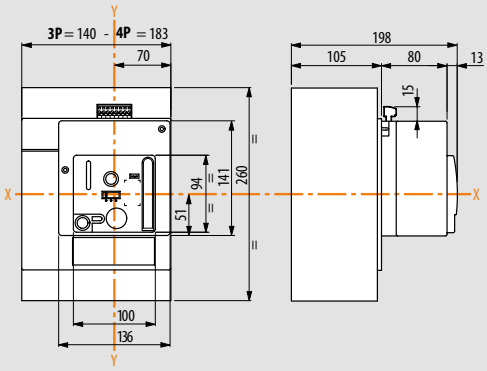


CLAMP PROTECTION COVERS

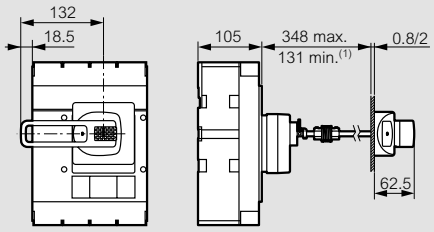


	A (mm)
M4 630	390
M4 630 + earth-leakage mod.	542

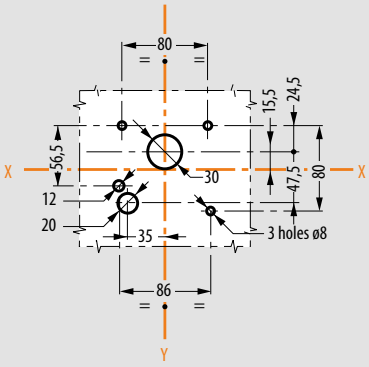
MOTOR CONTROL



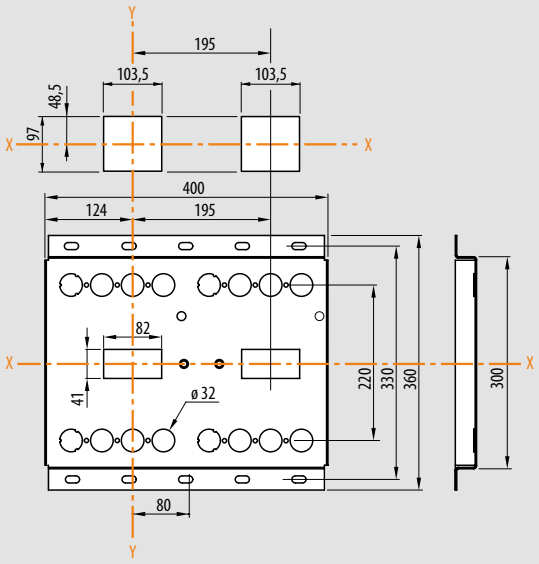
VARY-DEPTH ROTARY HANDLES



(1) 75 mm without mechanical system



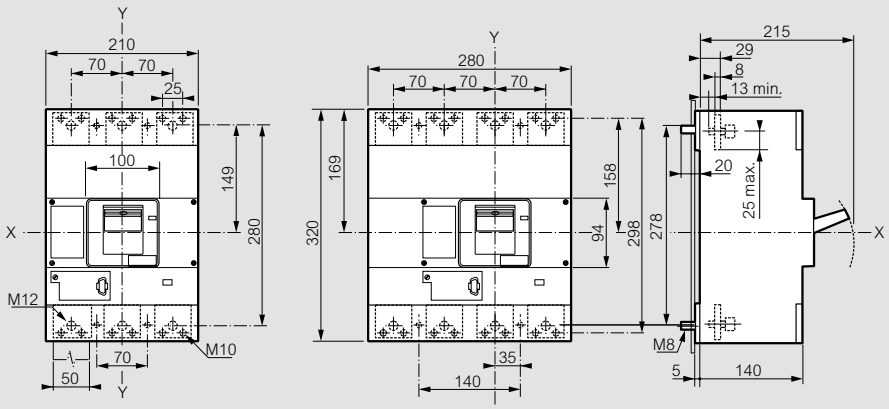
MECHANICAL INTERLOCK



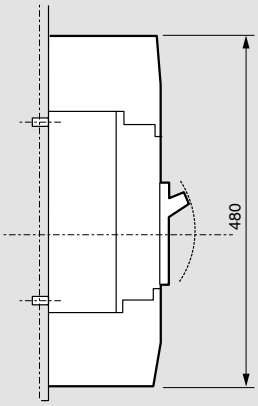
M5 1600

Dimensions

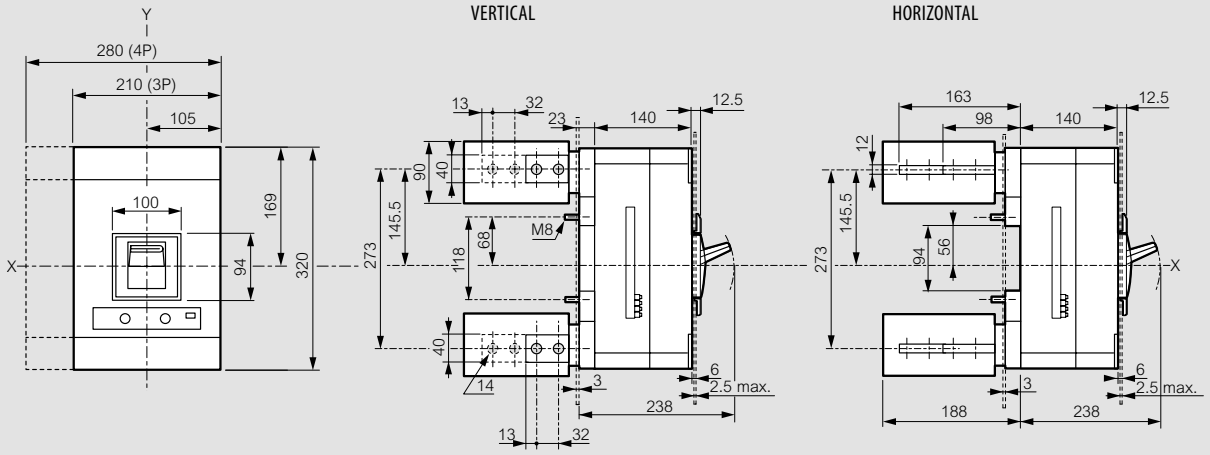
FIXED VERSION, FRONT TERMINALS



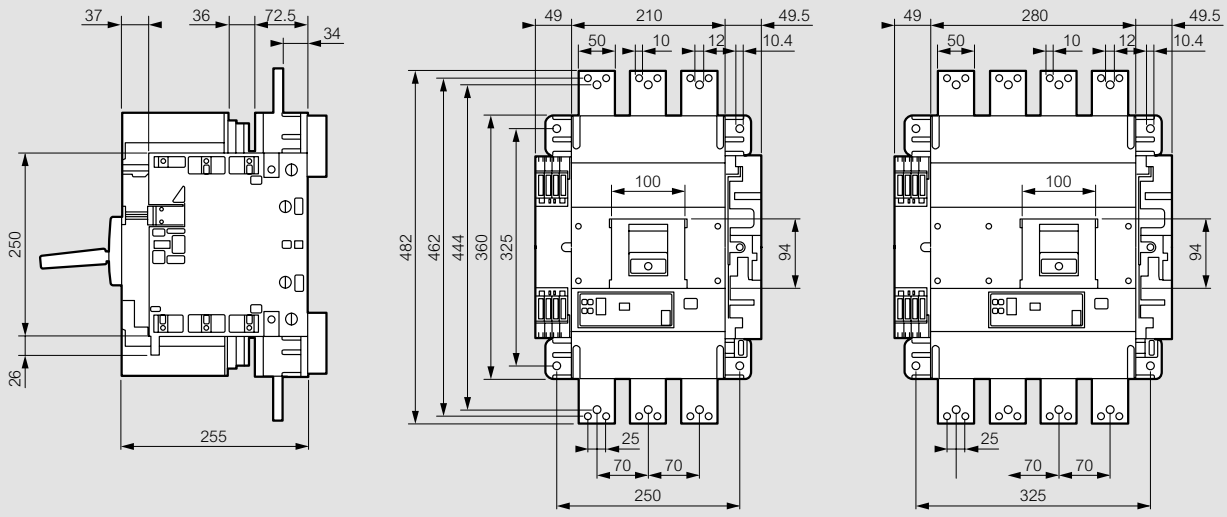
CLAMP PROTECTION COVERS



FIXED VERSION, REAR TERMINALS



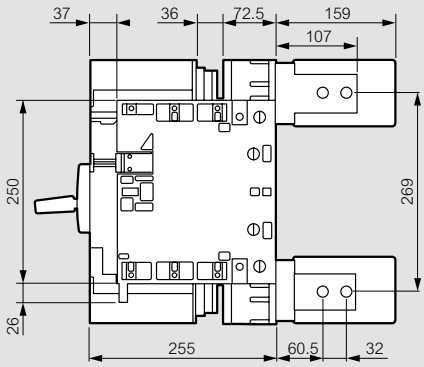
DRAW-OUT VERSION, FRONT TERMINALS

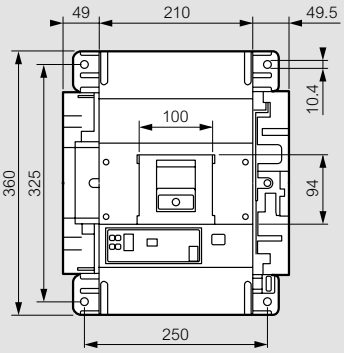


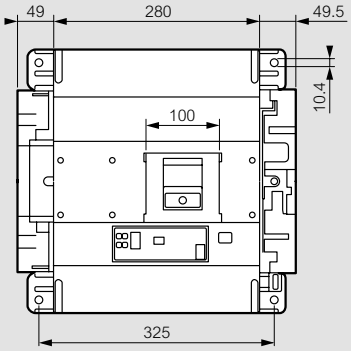
M5 1600

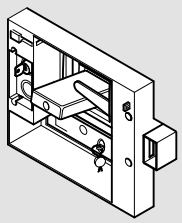
Dimensions

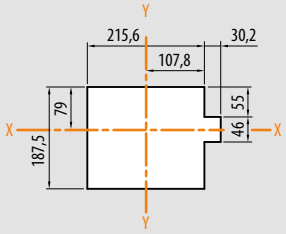
DRAW-OUT VERSION, REAR TERMINALS

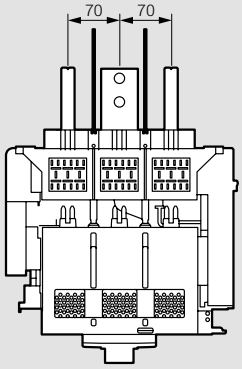


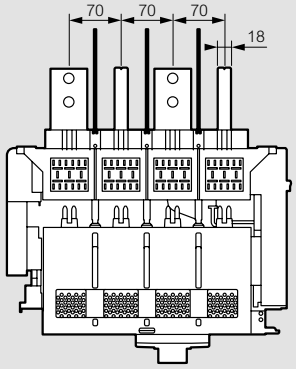


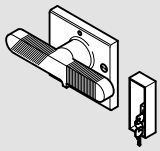


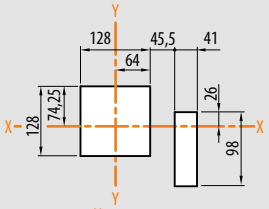


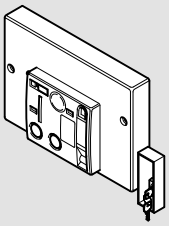


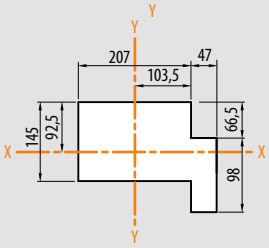




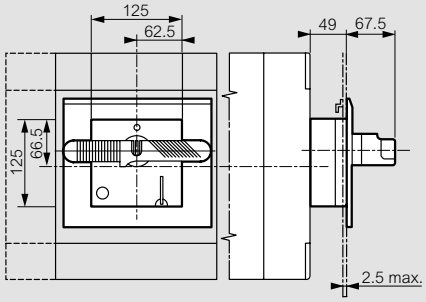


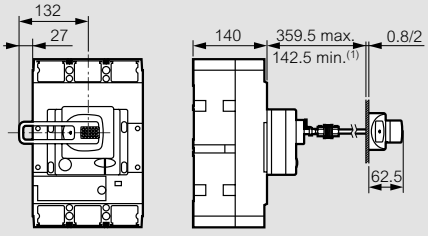






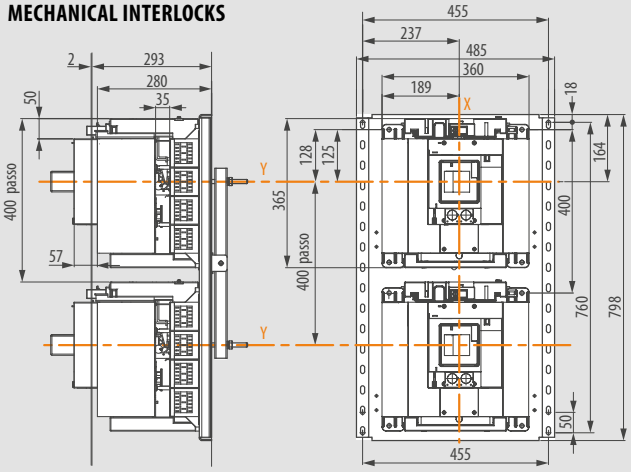
ROTARY HANDLES



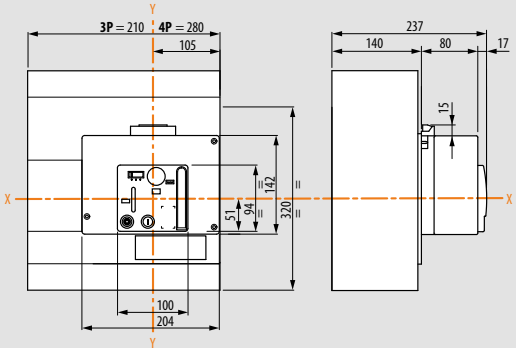


1: 75 mm without mechanical system

MECHANICAL INTERLOCKS



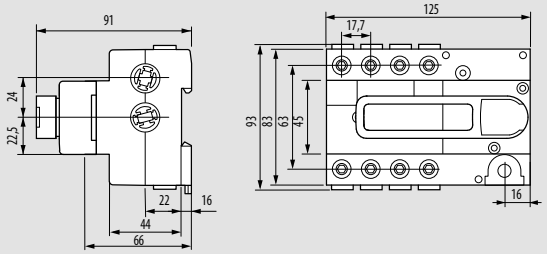
MOTOR CONTROLS



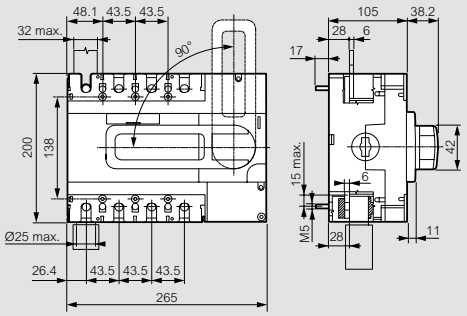
MEGASWITCH

Dimensional data

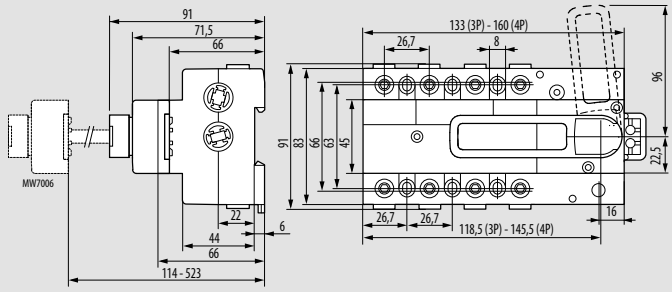
MW63

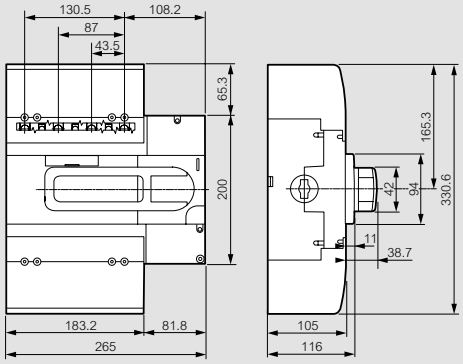


MW630

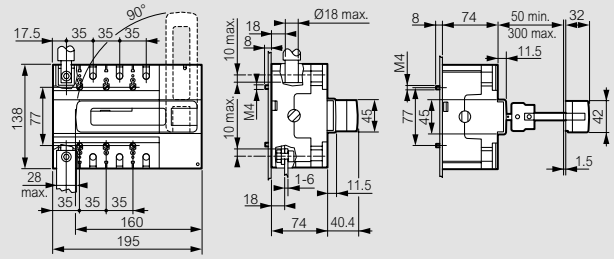


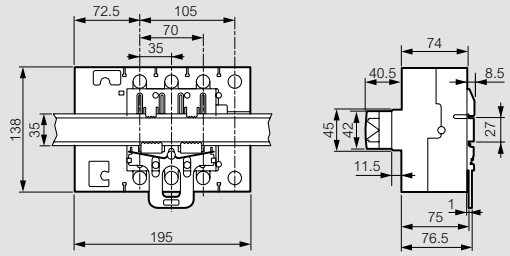
MW160

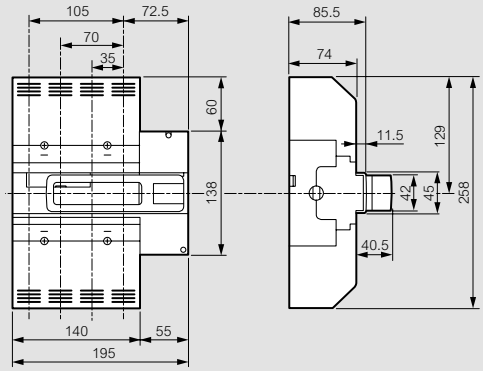




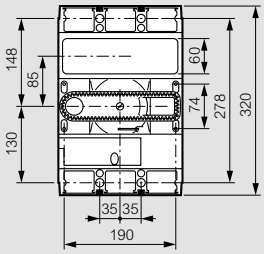
MW250

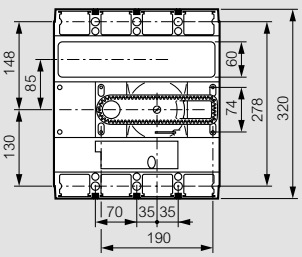




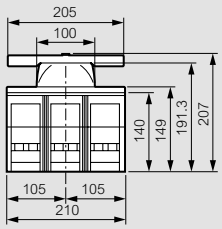


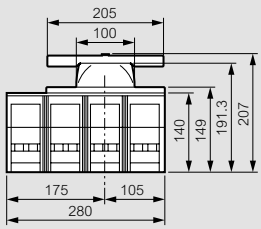
MW1600



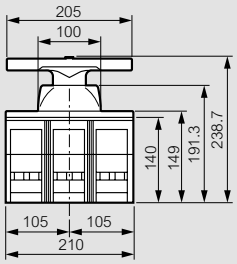


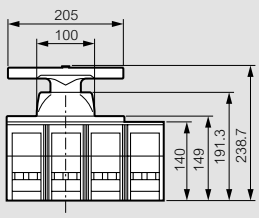
Without handle extension





With handle extension



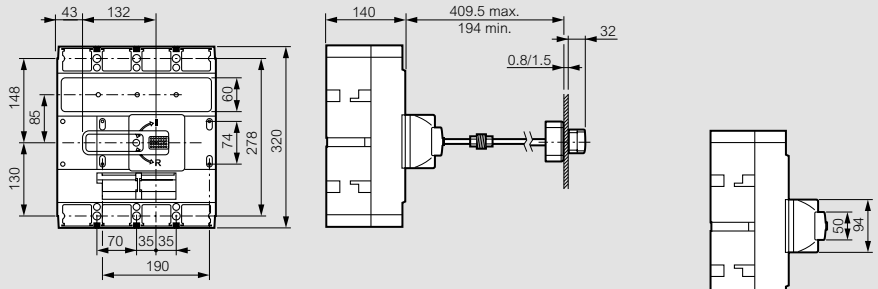


MEGASWITCH

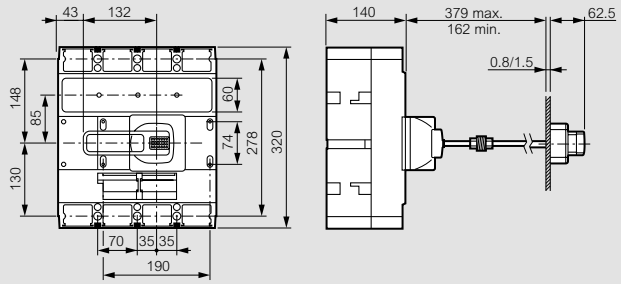
Dimensions

VARY-DEPTH ROTARY HANDLE

IP 40

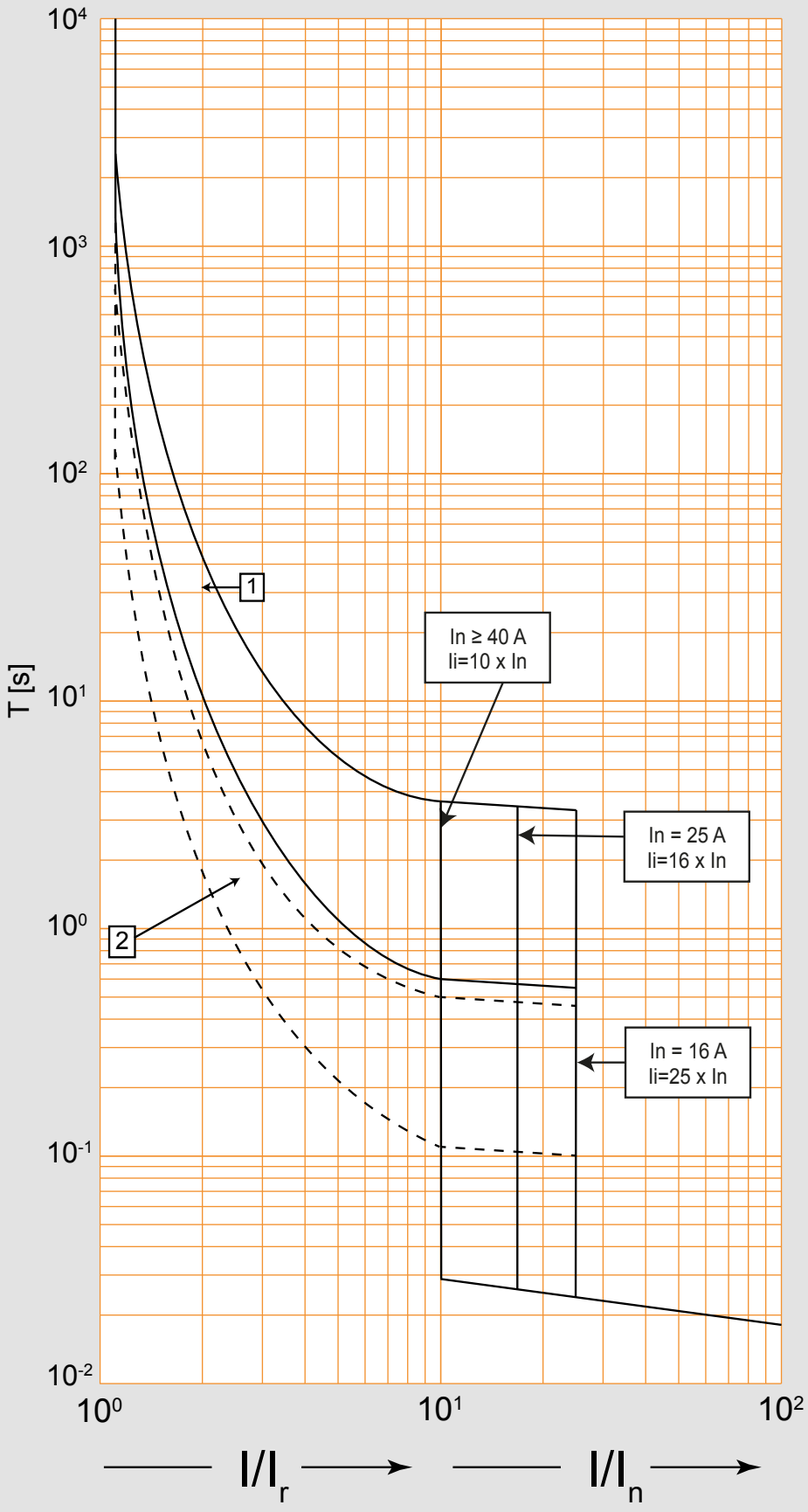


IP 55



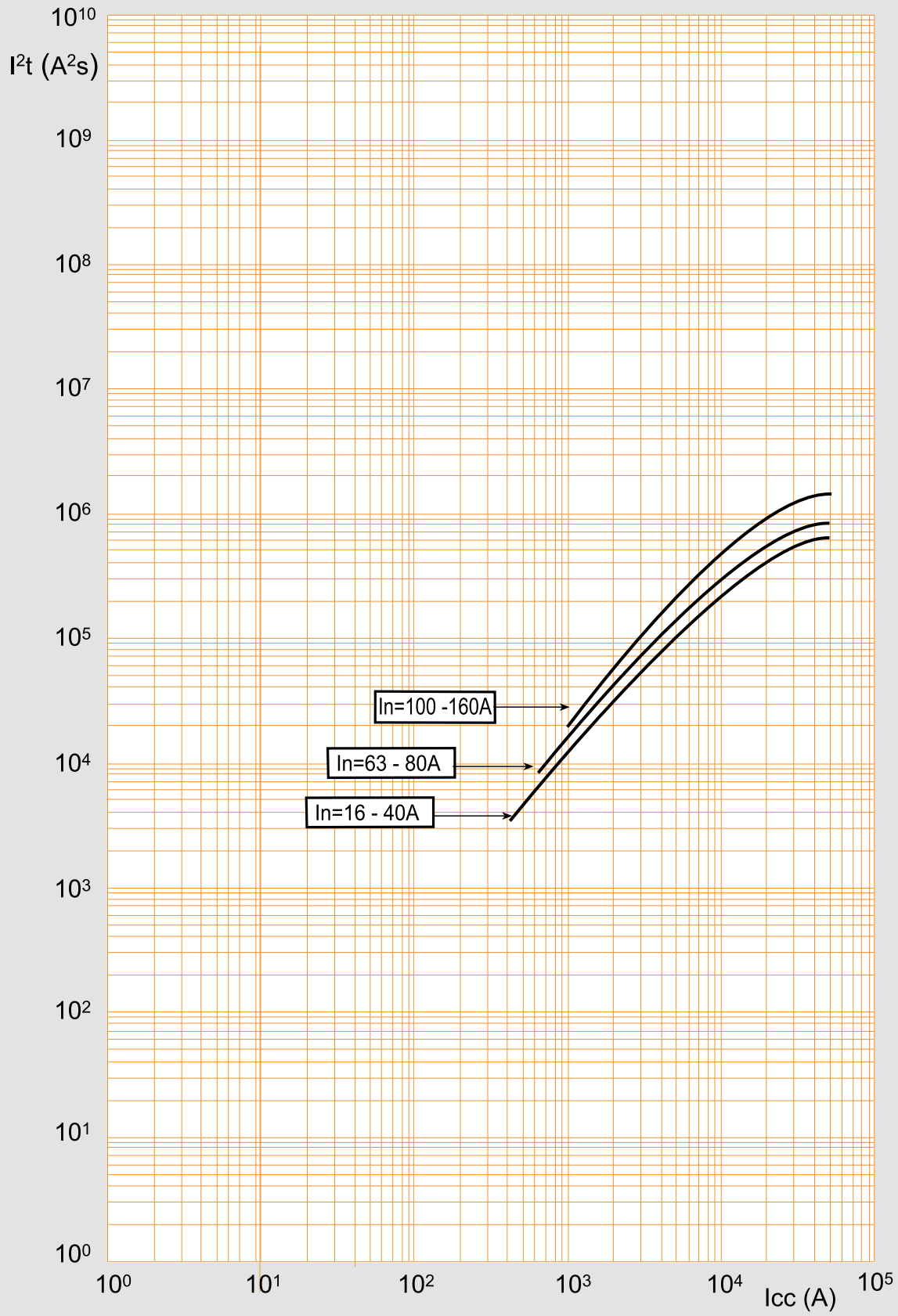
M1 160

Current time tripping curve



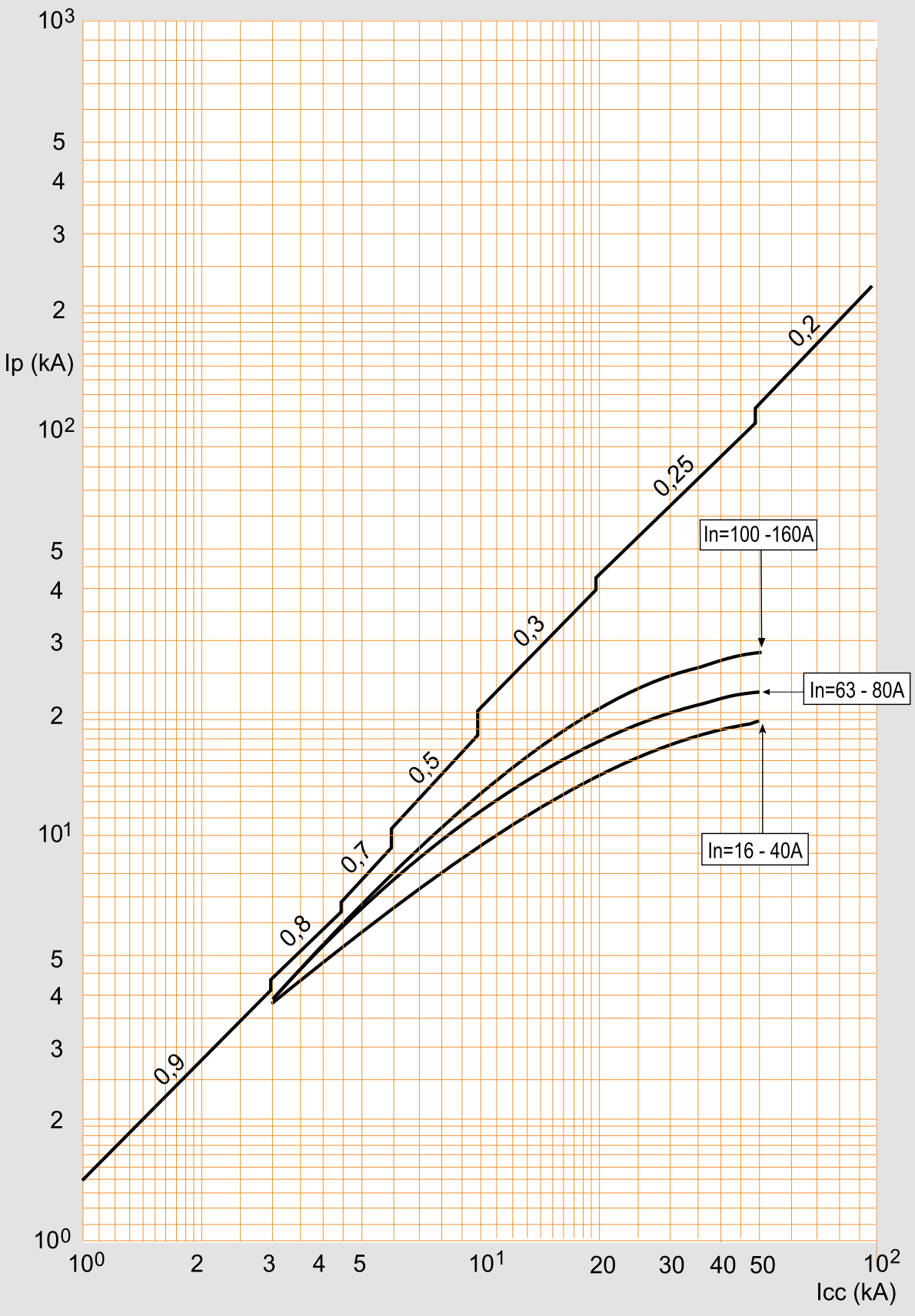
M1 160

Specific through energy curve



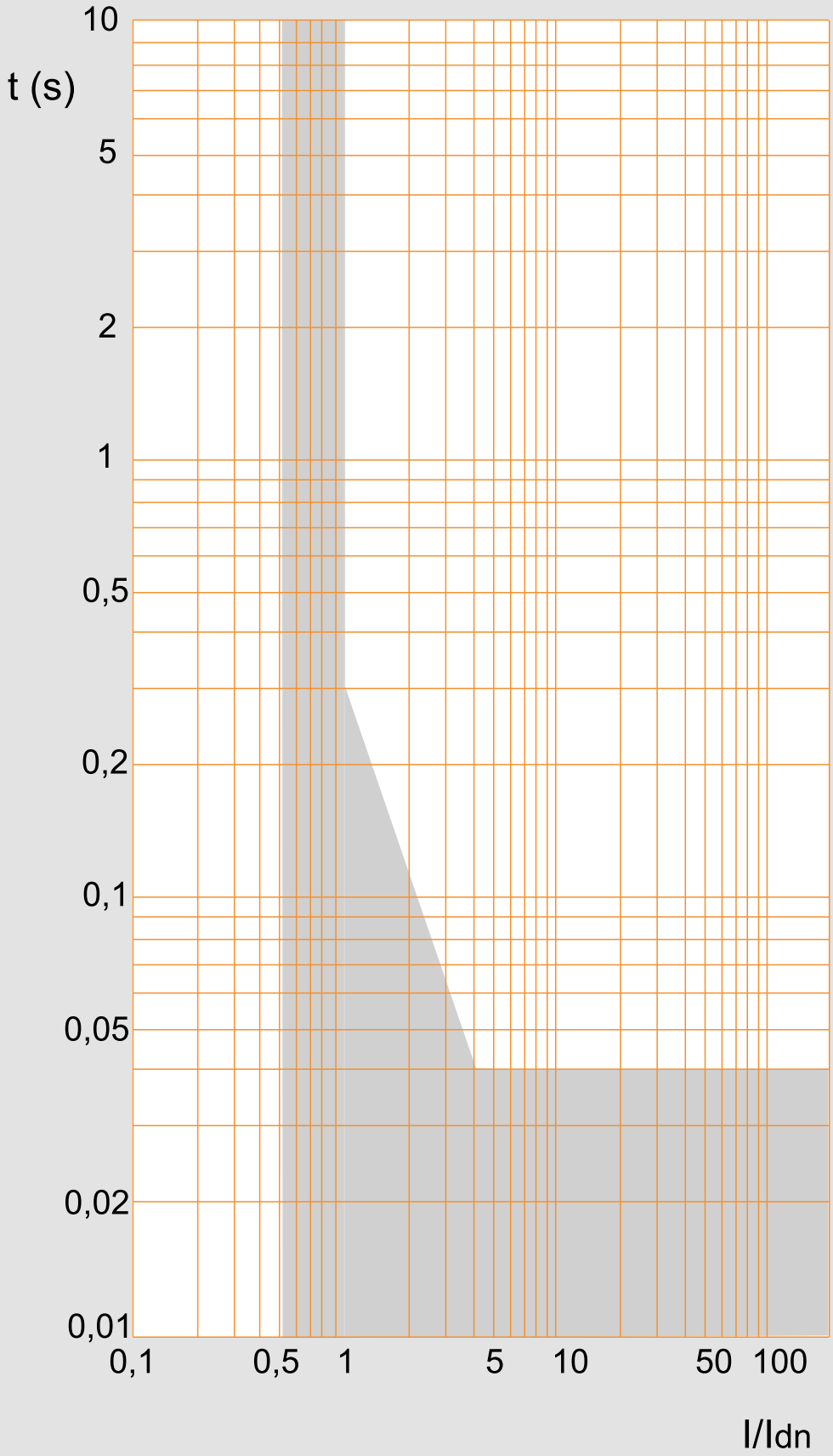
M1 160

Limitation curve



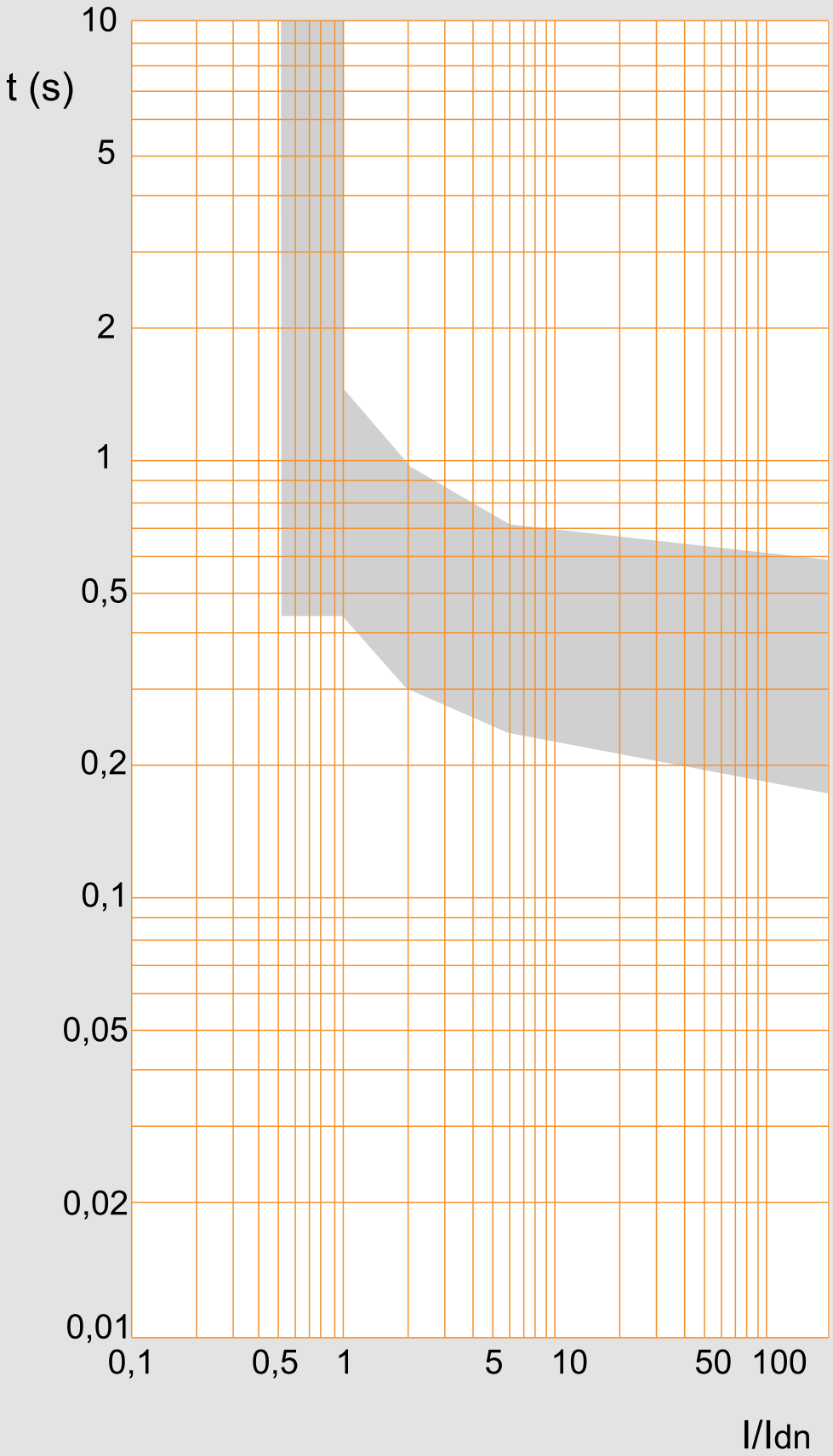
M1 160

Earth-leakage tripping curve (INSTANTANEOUS TRIPPING)



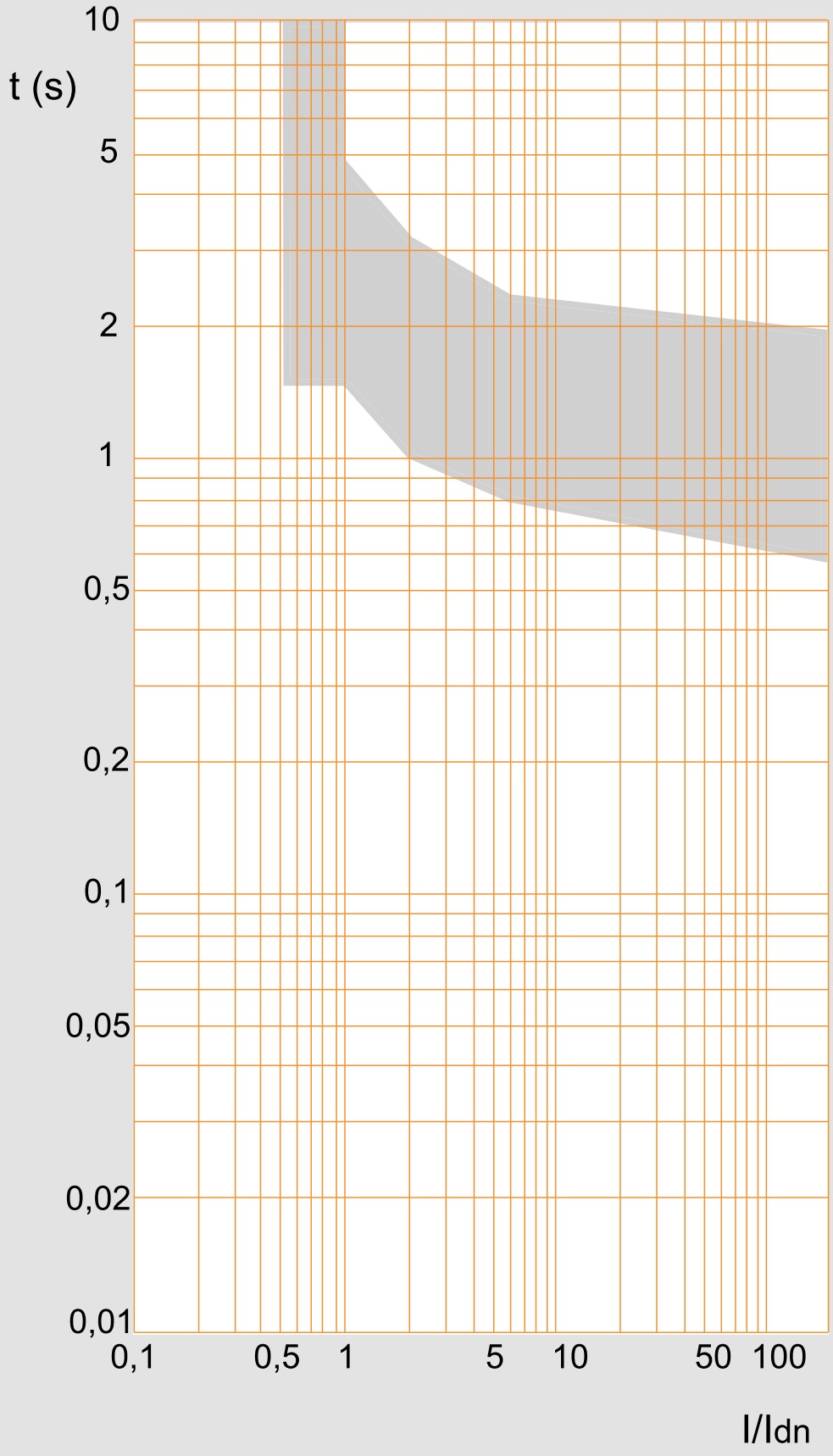
M1 160

Earth-leakage tripping curve (ADJUSTMENT 0.3 s)



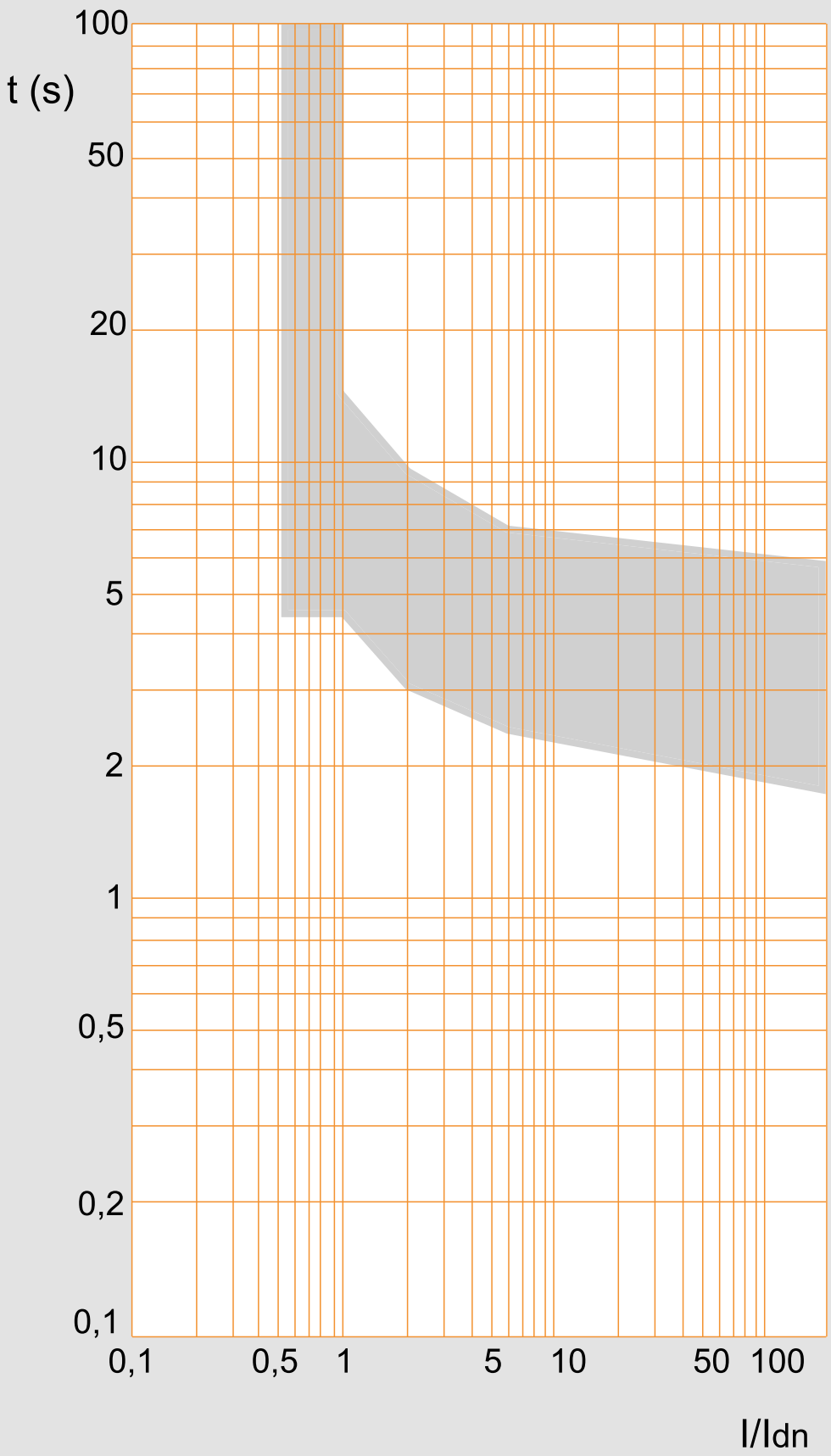
M1 160

Earth-leakage tripping curve (ADJUSTMENT 1 s)



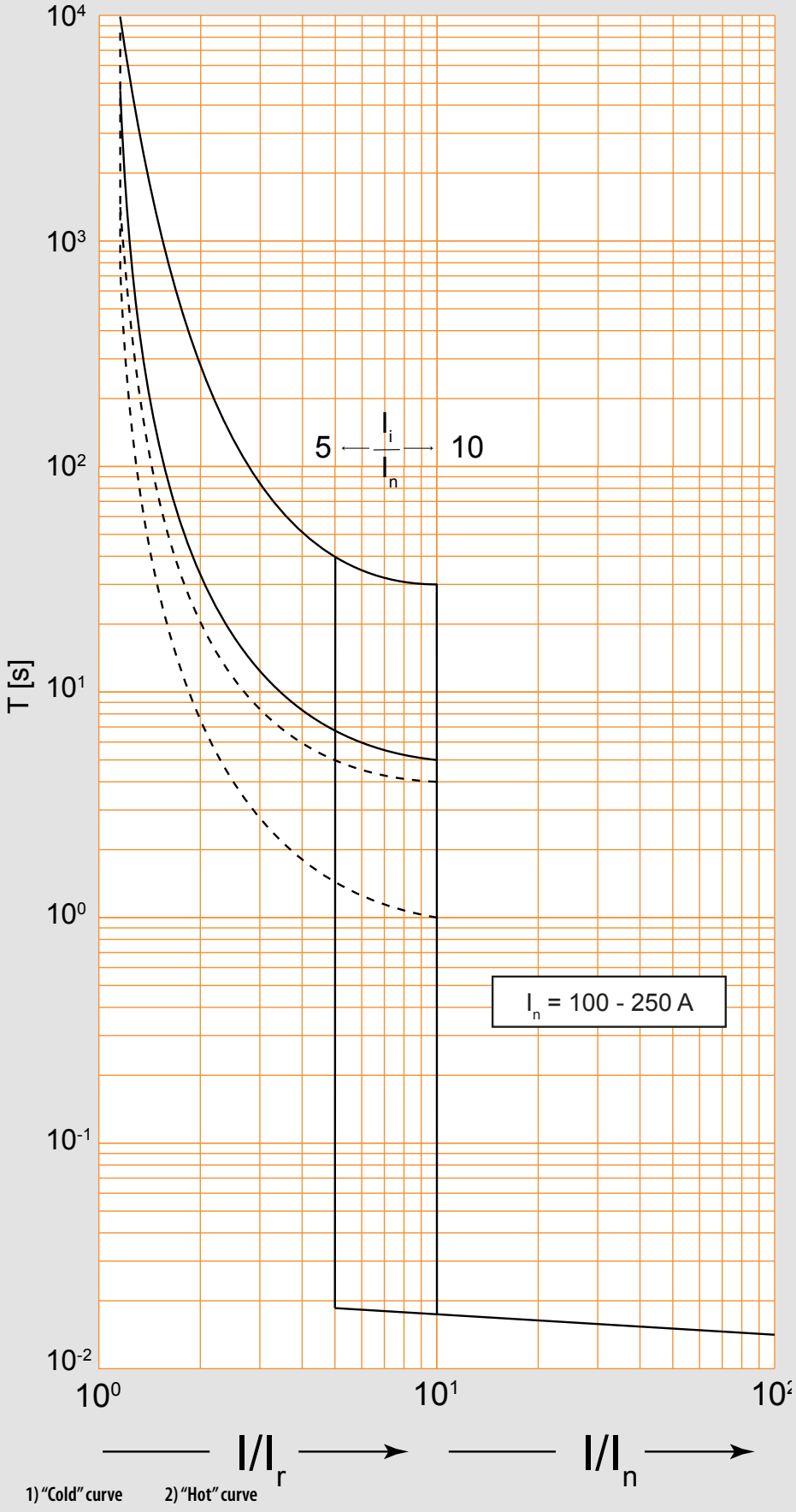
M1 160

Earth-leakage tripping curve (ADJUSTMENT 3 s)



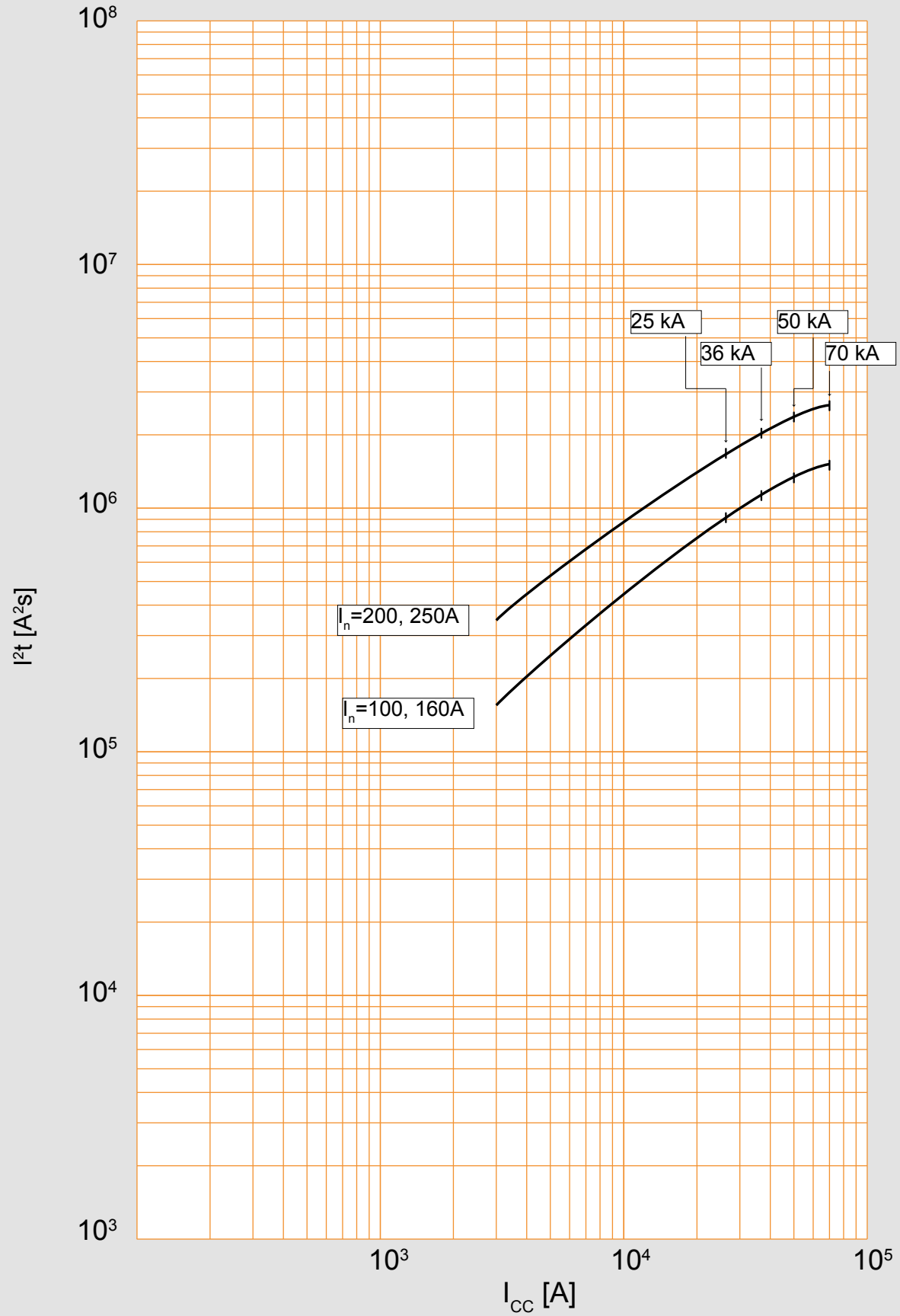
M2 250

Current time tripping curve



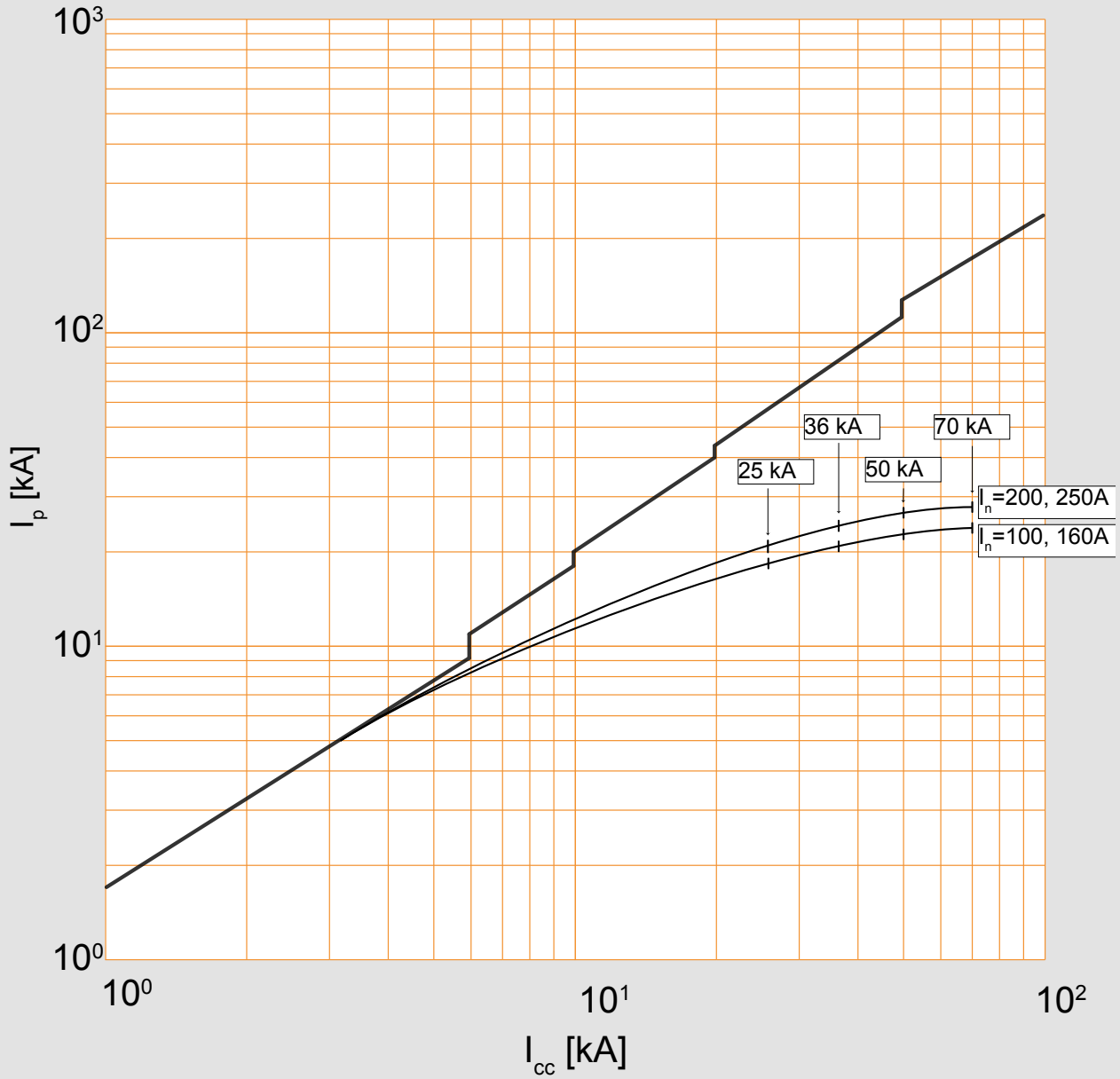
M2 250

Specific through energy curve



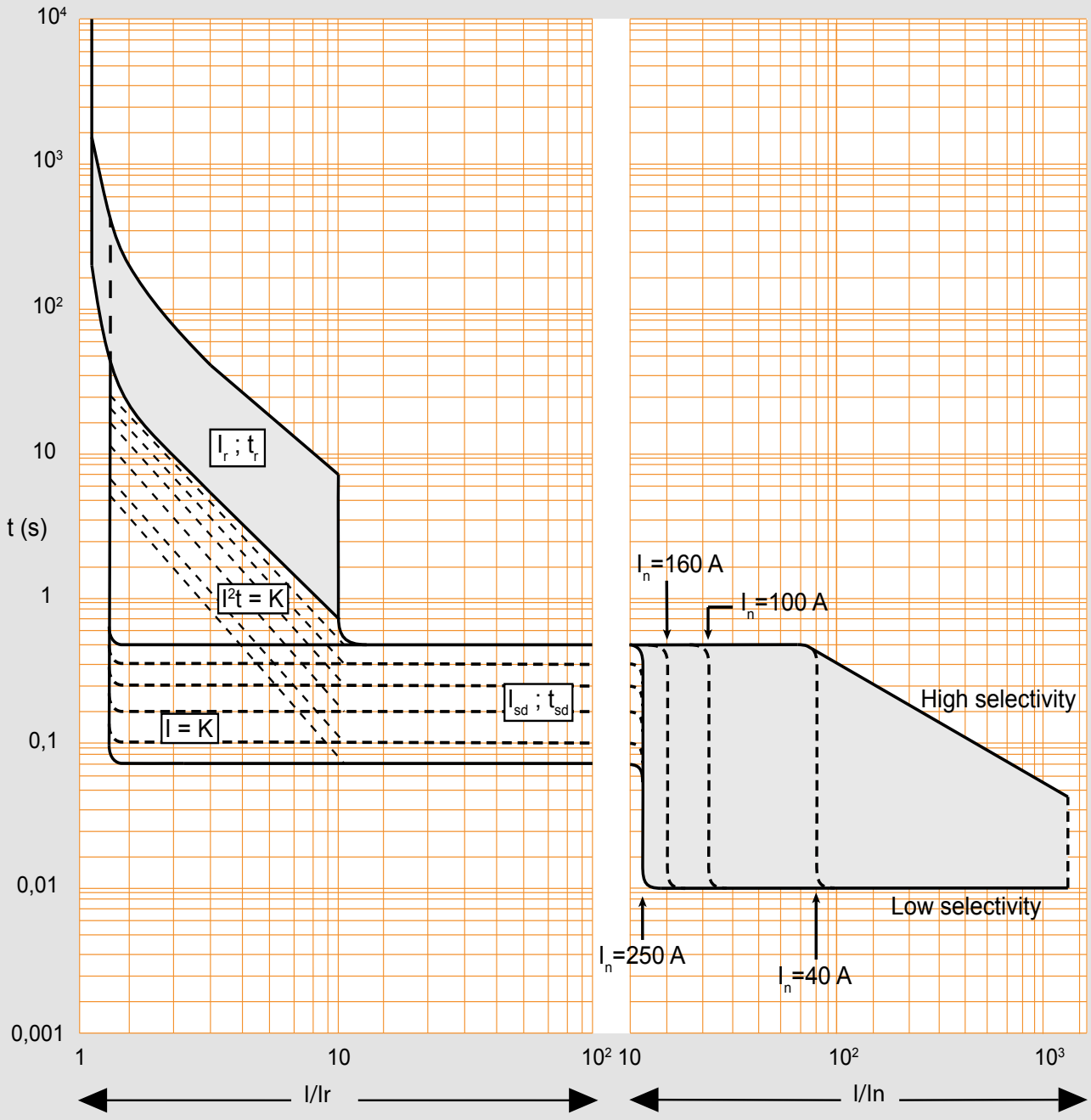
M2 250

Limitation curve



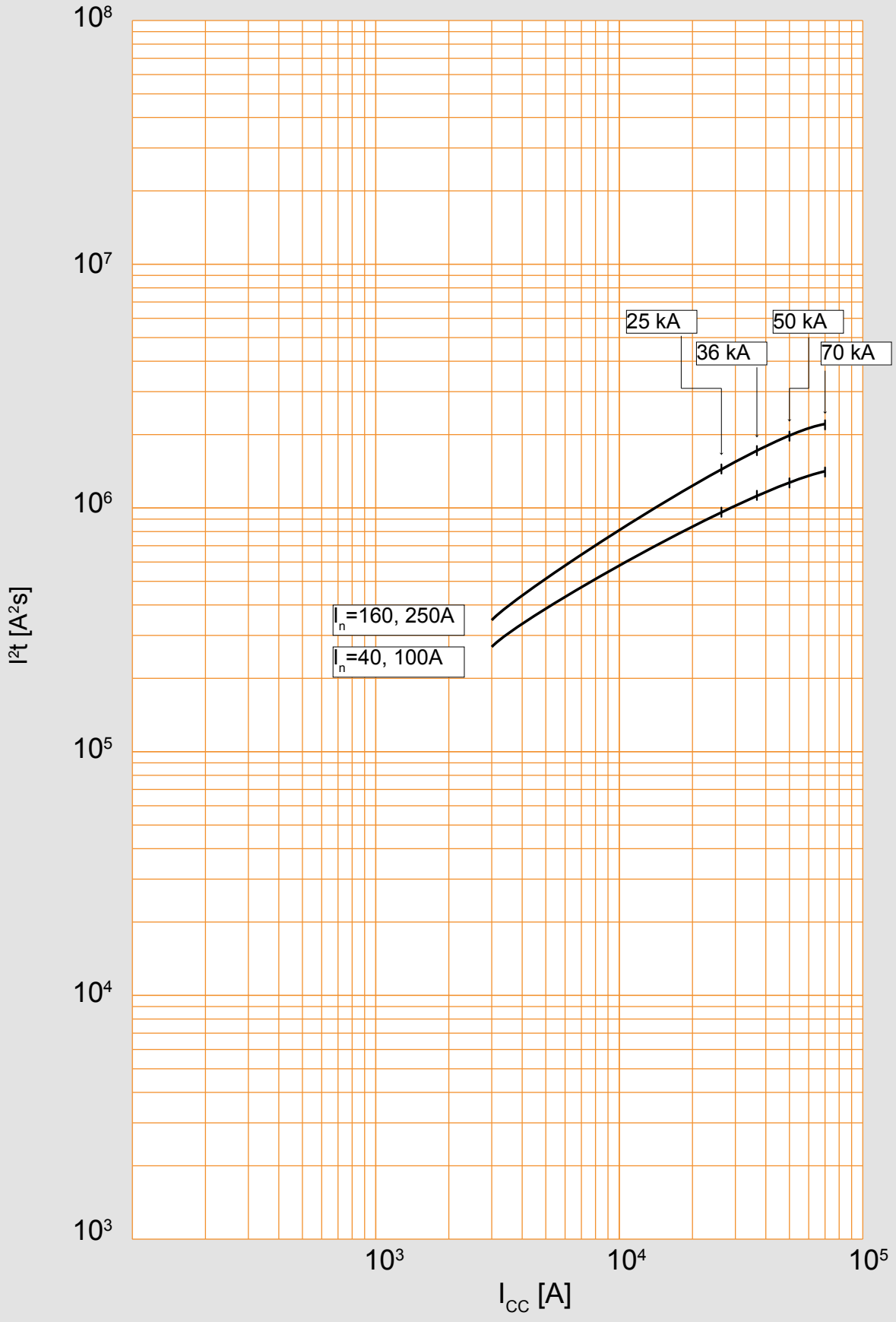
M2 250 ELECTRONIC

Current time tripping curve



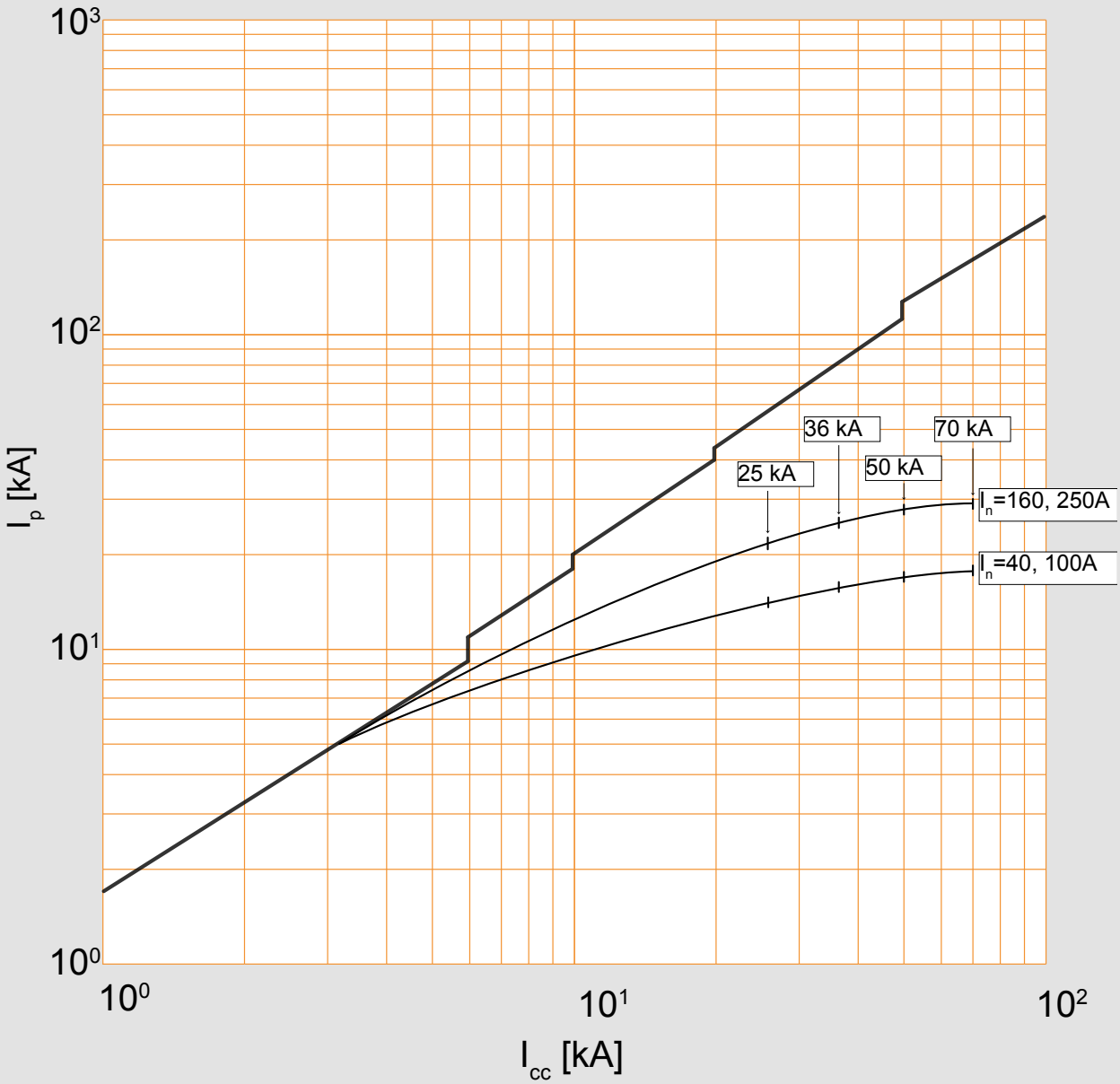
M2 250 ELECTRONIC

Specific through energy curve



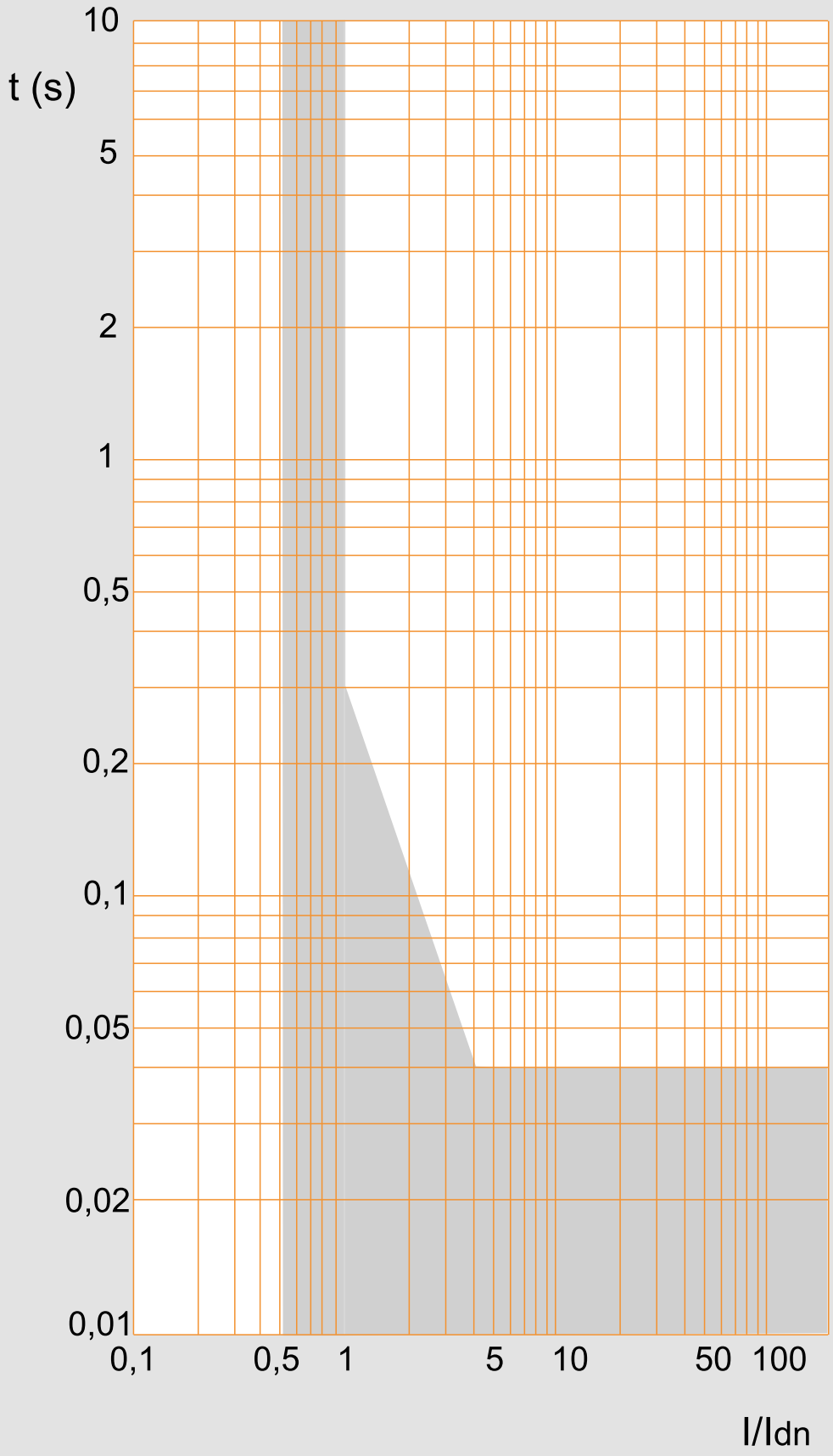
M2 250 ELECTRONIC

Limitation curve



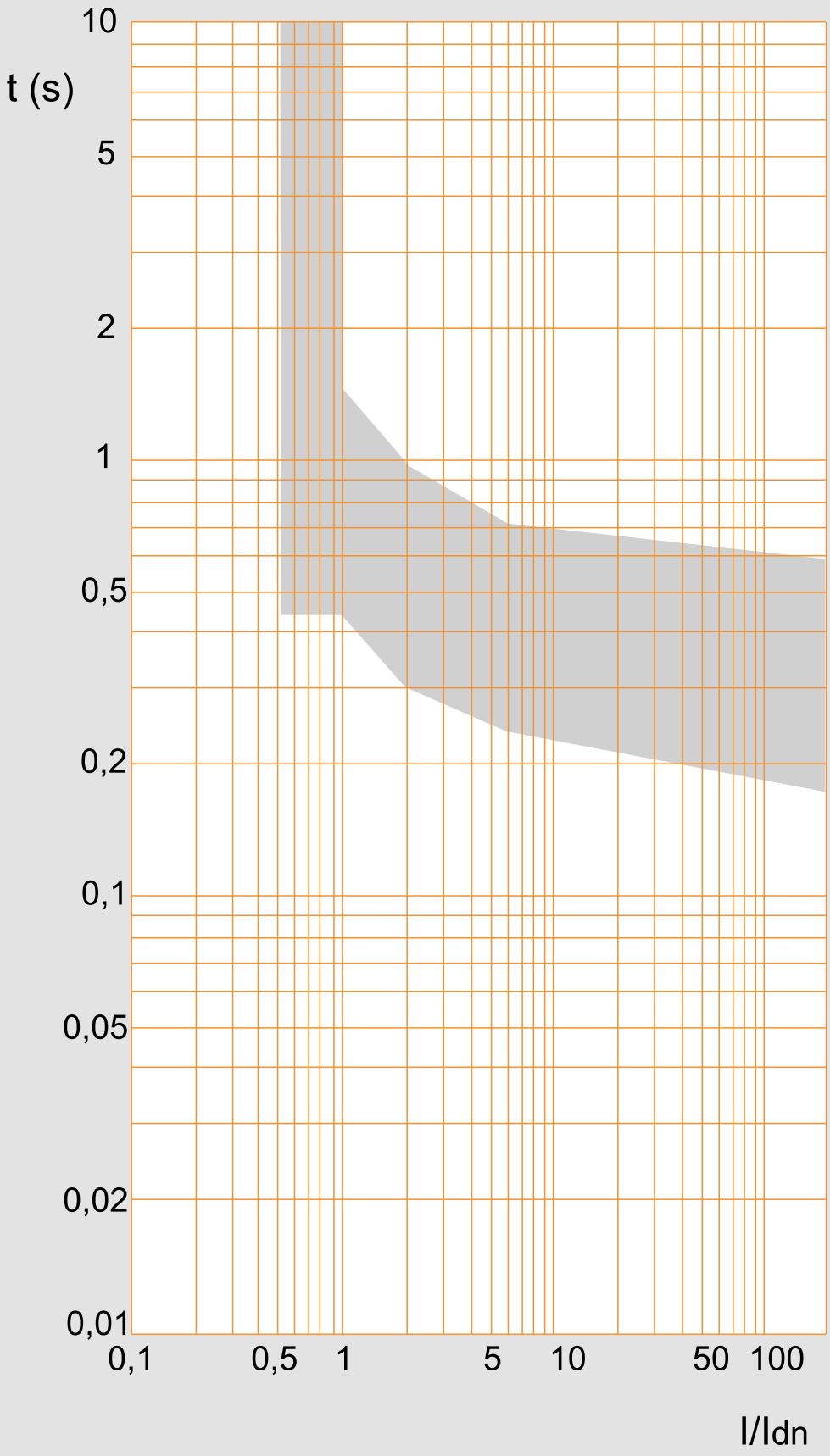
M2 250 ELECTRONIC

Earth-leakage tripping curve (INSTANTANEOUS TRIPPING)



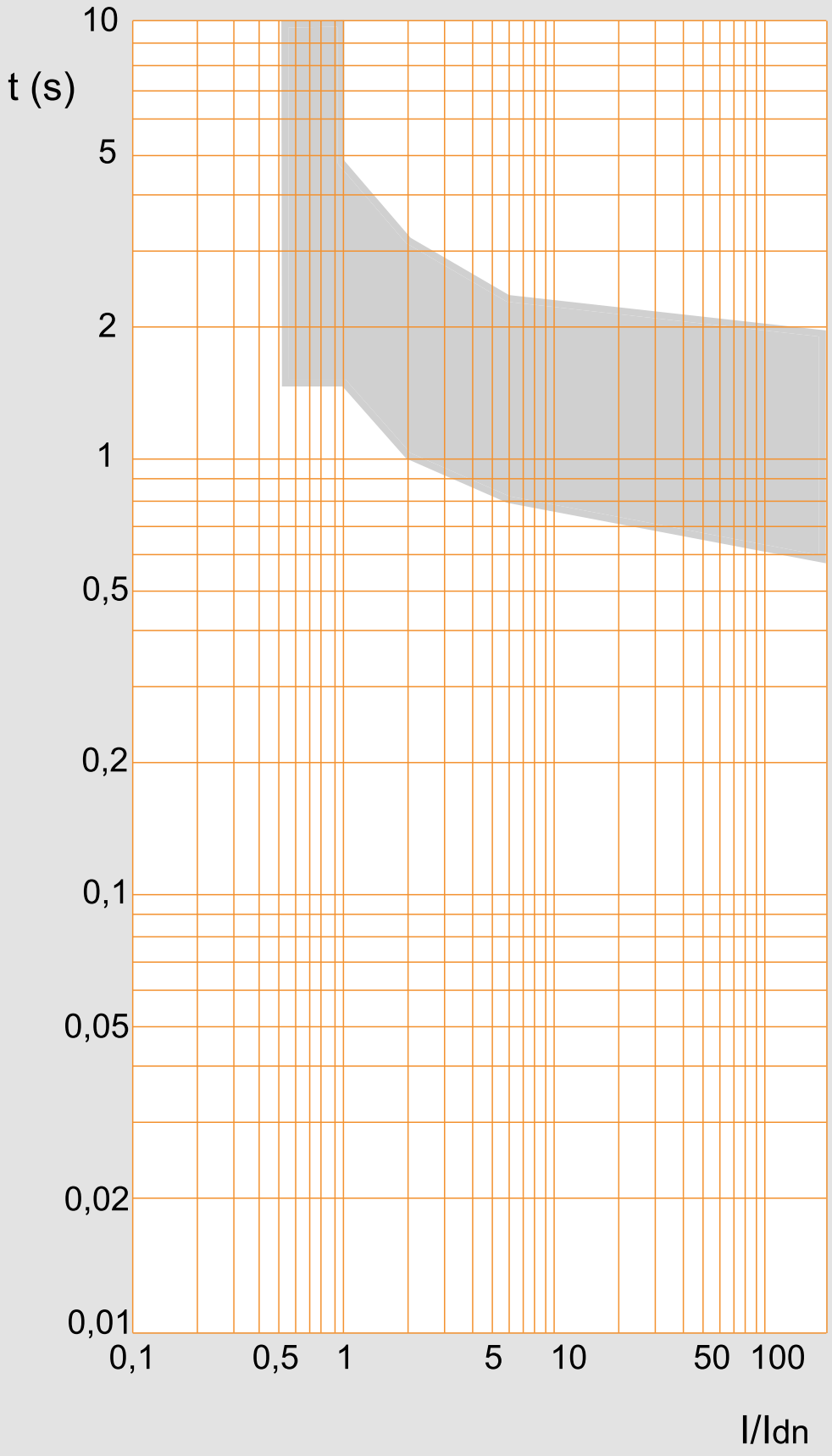
M2 250 ELECTRONIC

Earth-leakage tripping curve (ADJUSTMENT 0.3 s)



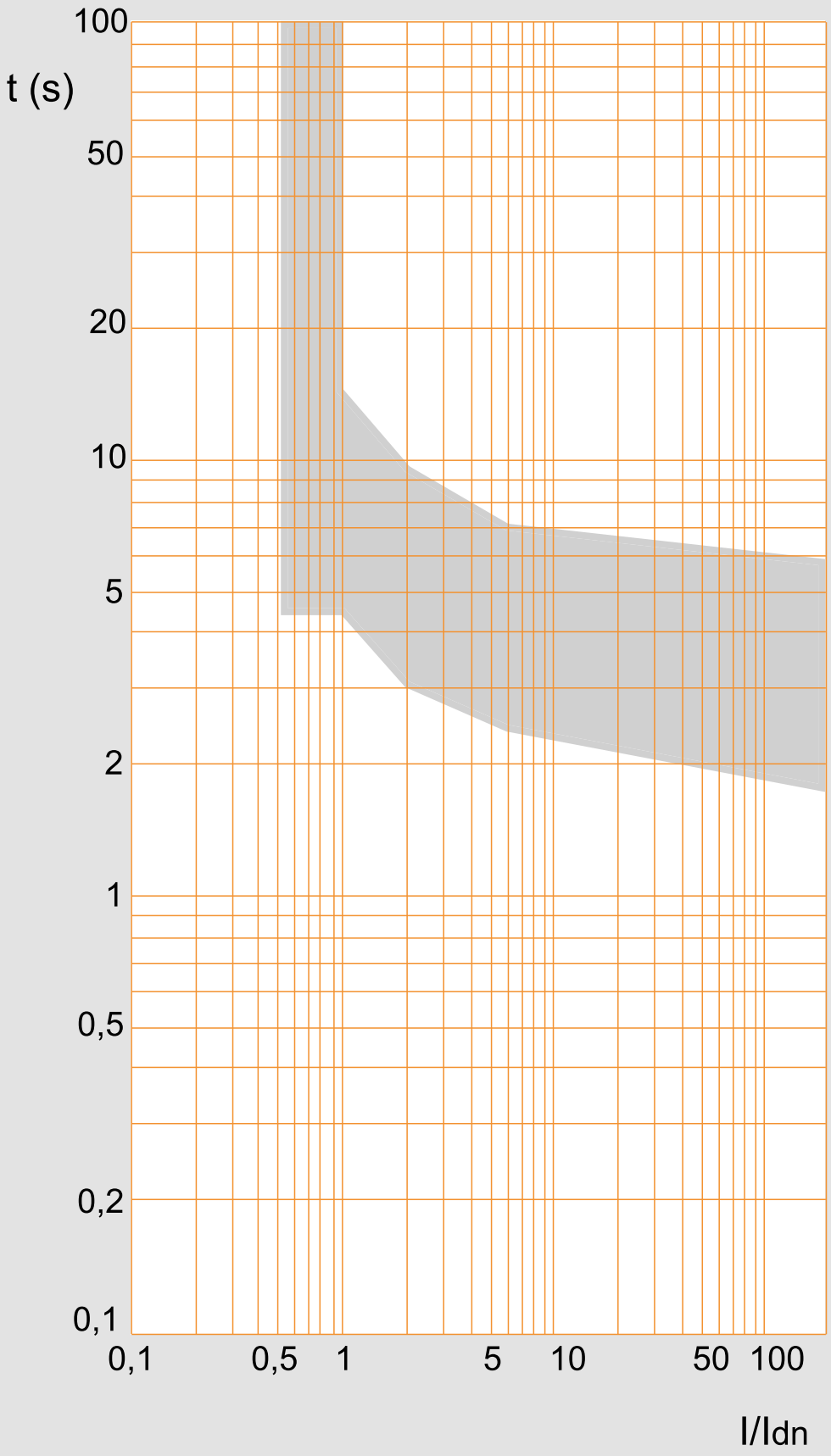
M2 250 ELECTRONIC

Earth-leakage tripping curve (ADJUSTMENT 1 s)



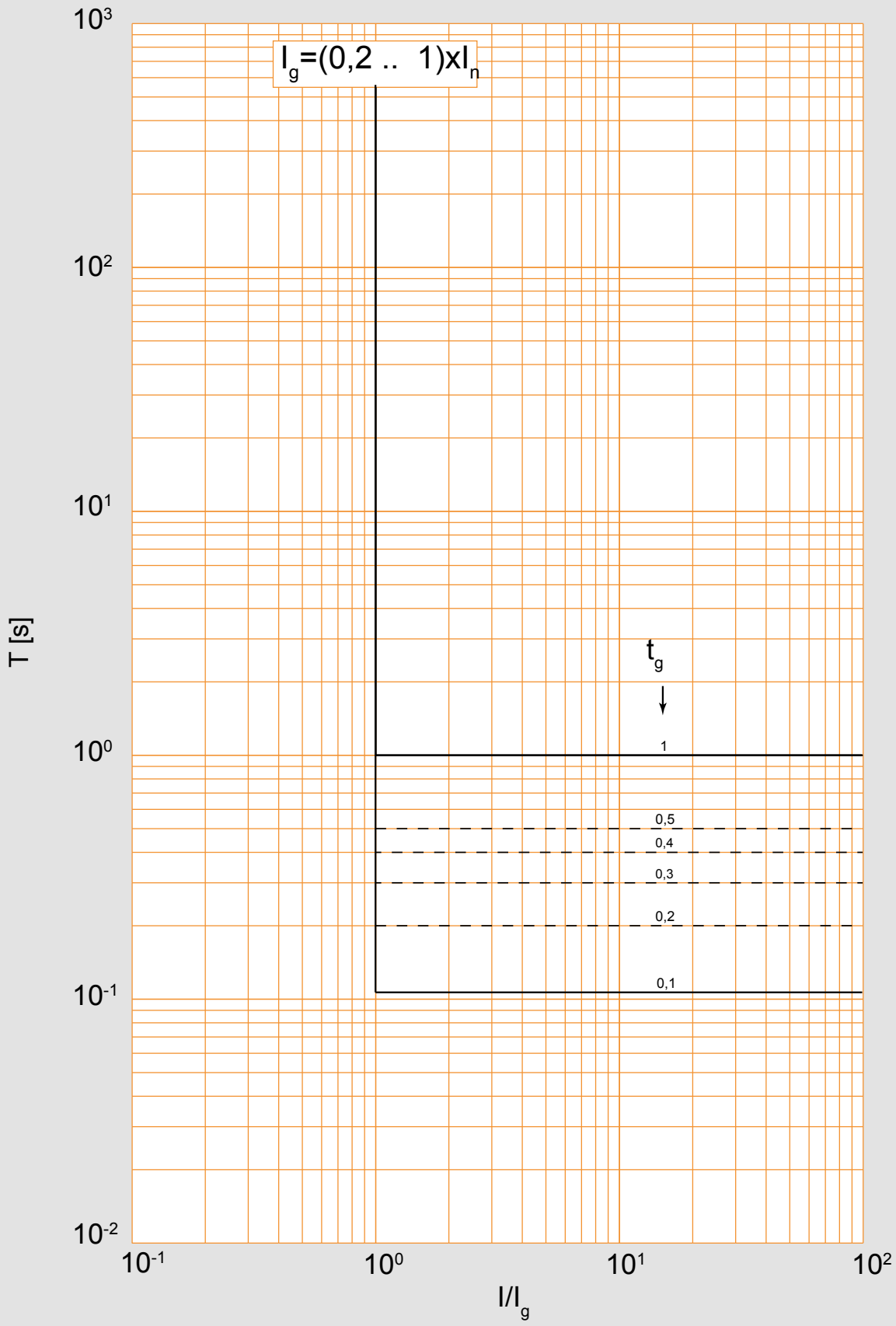
M2 250 ELECTRONIC

Earth-leakage tripping curve (ADJUSTMENT 3 s)



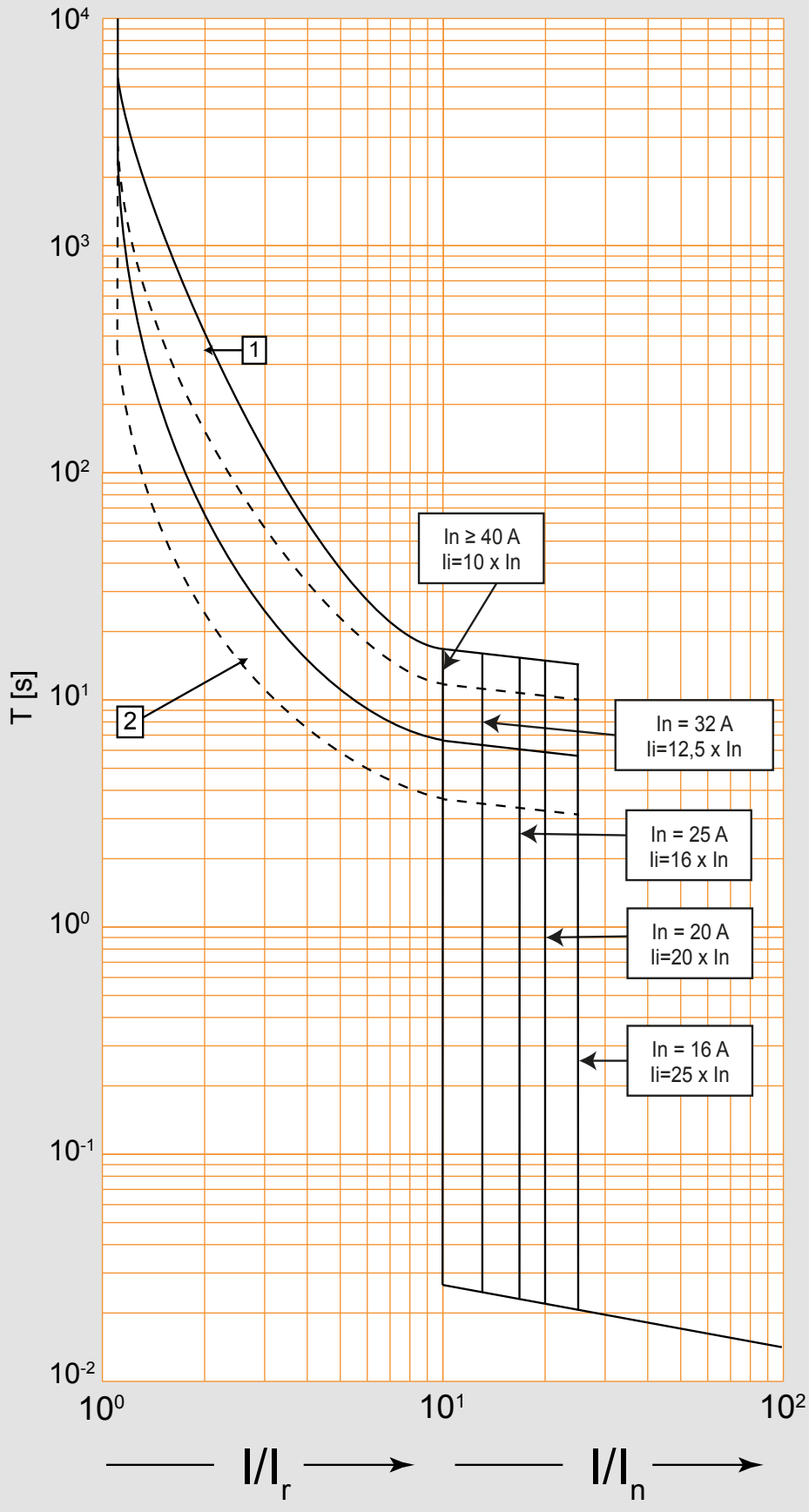
M2 250 ELECTRONIC

Tripping curve for earth fault



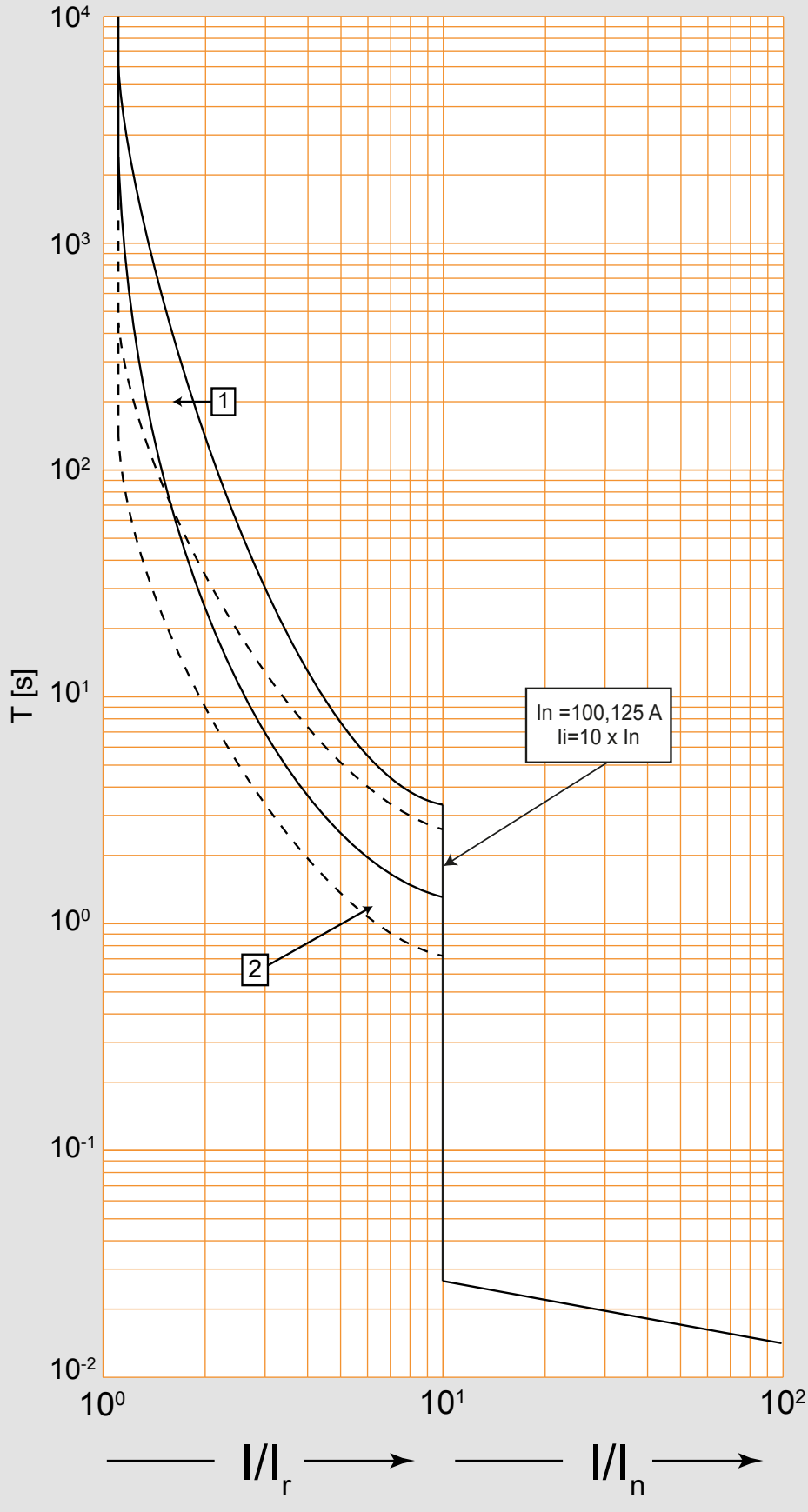
M3 125

Current time tripping curve (In ≤ 80A)



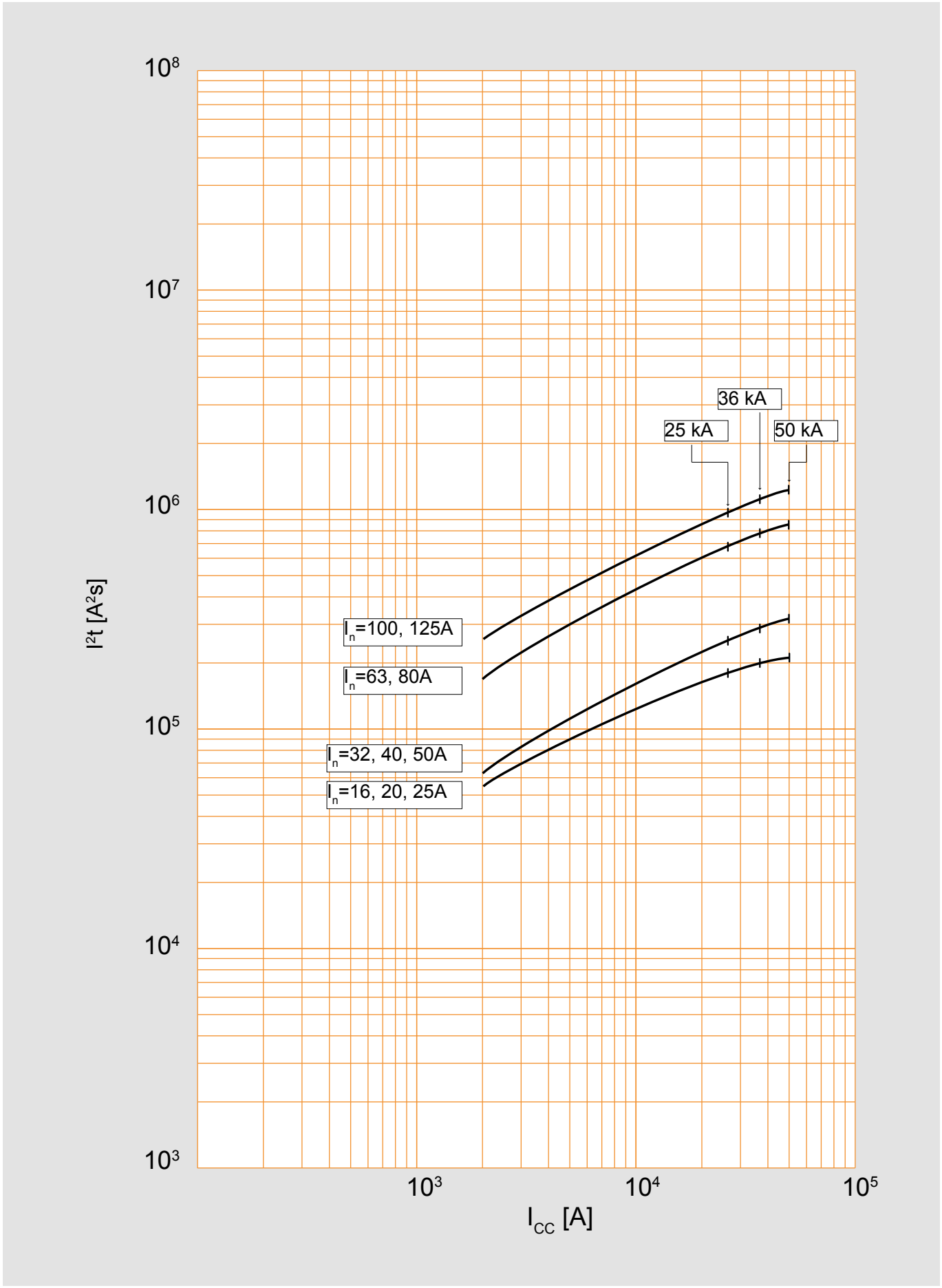
M3 125

Current time tripping curve (In> 80A)



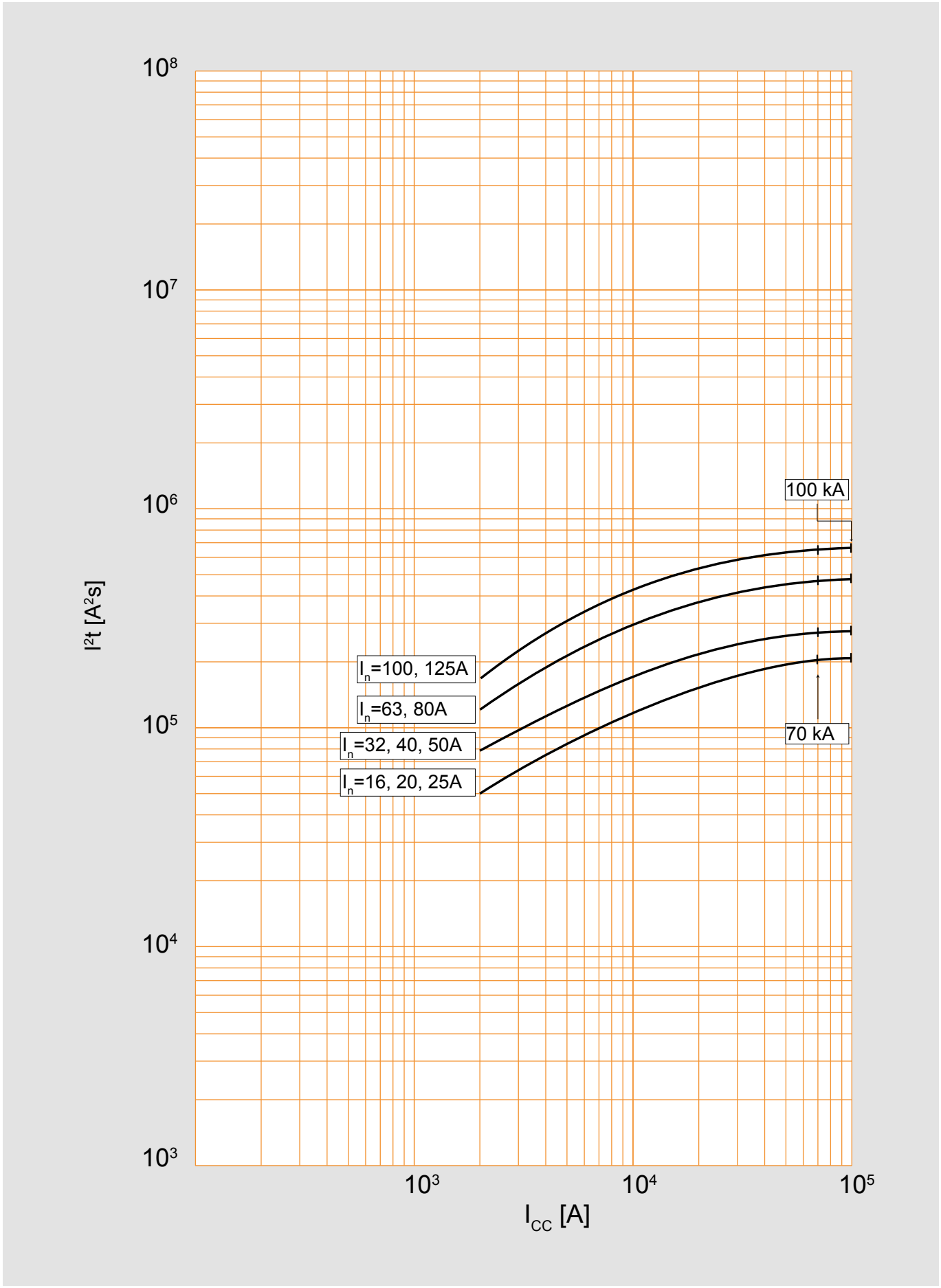
M3 125

Specific through energy curve (up to 50kA)



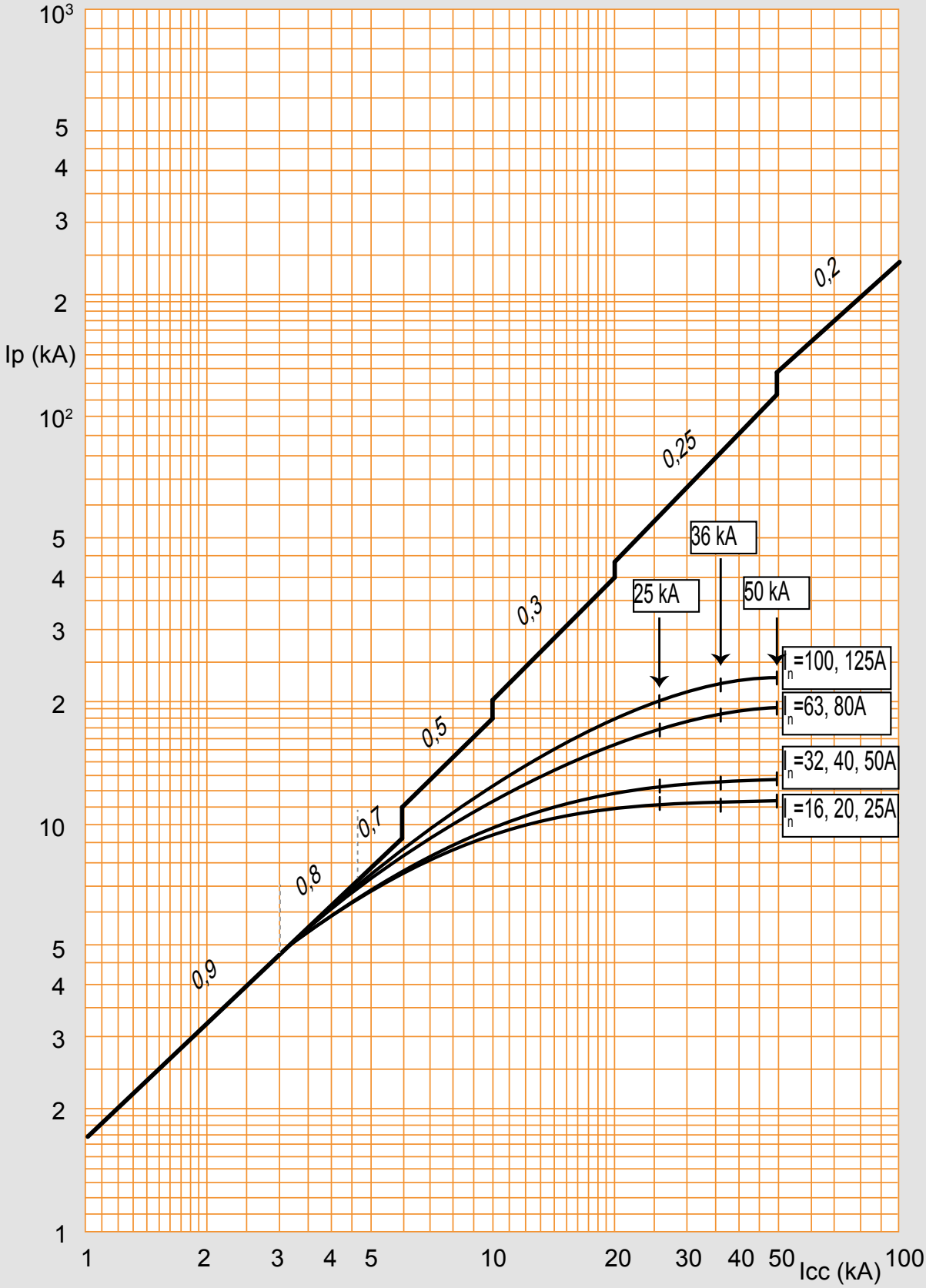
M3 125

Specific through energy curve (70-100kA)



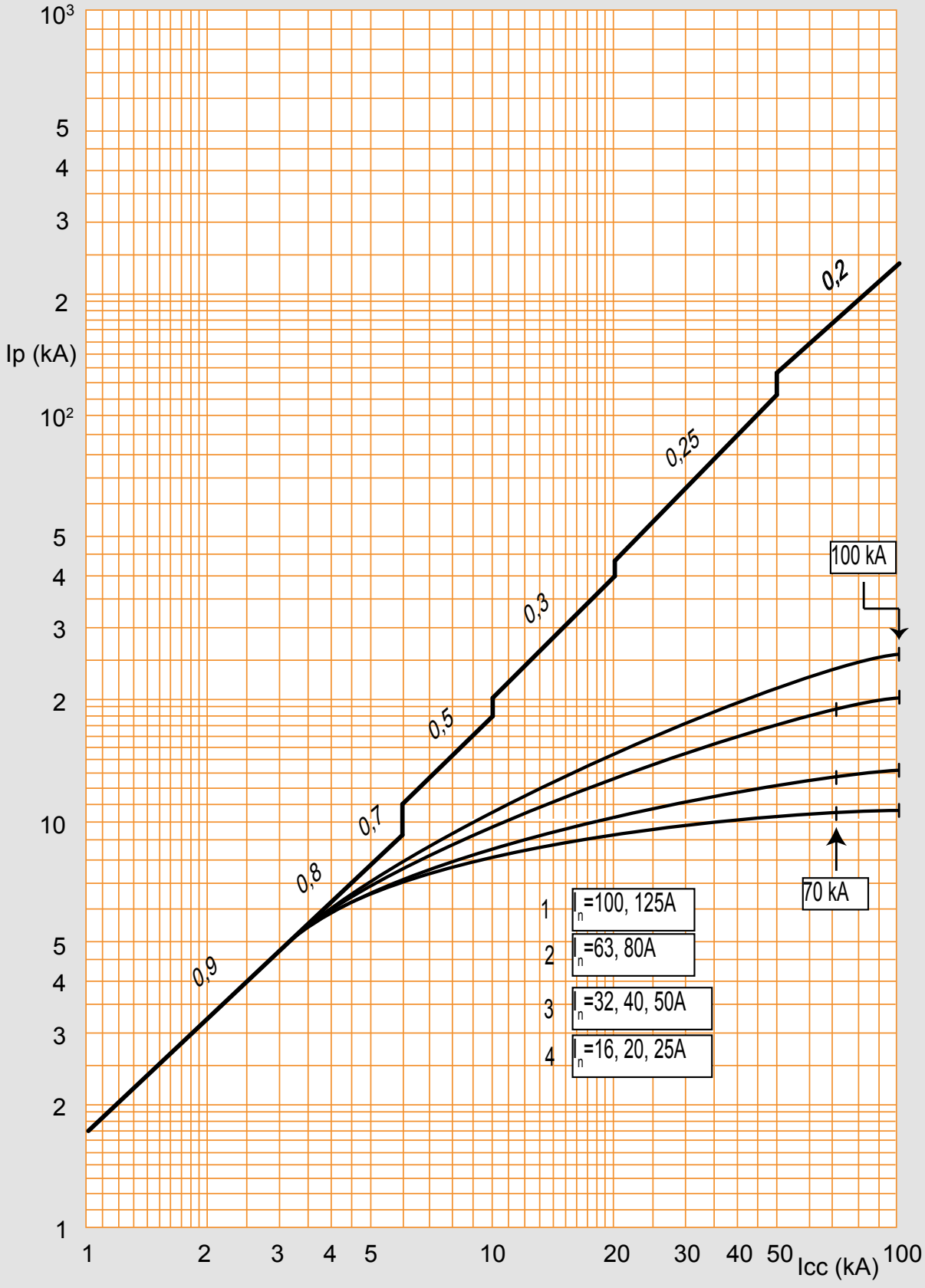
M3 125

Limitation curve (up to 50kA)



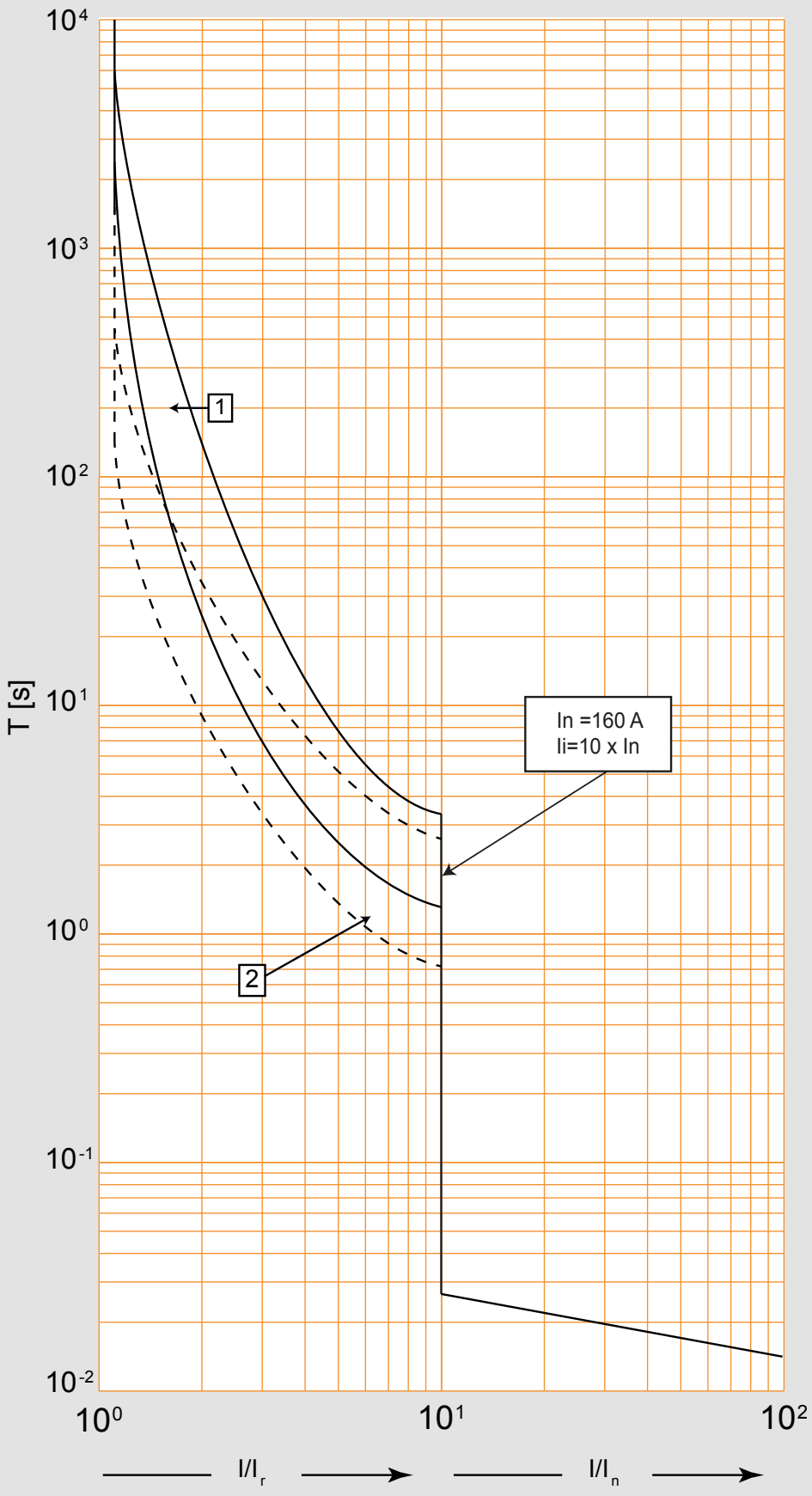
M3 125

Limitation curve (70-100kA)



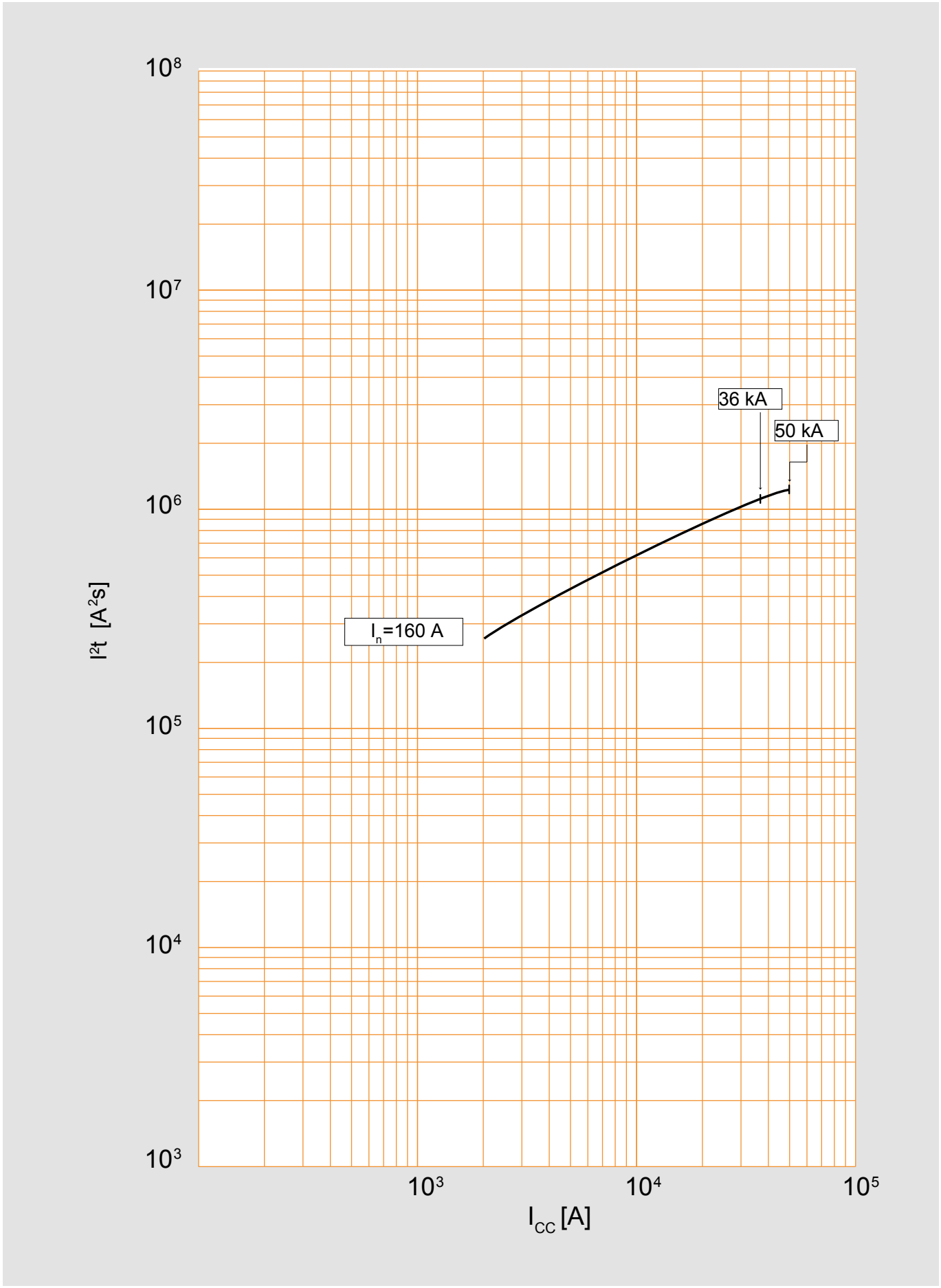
M3 160

Current time tripping curve



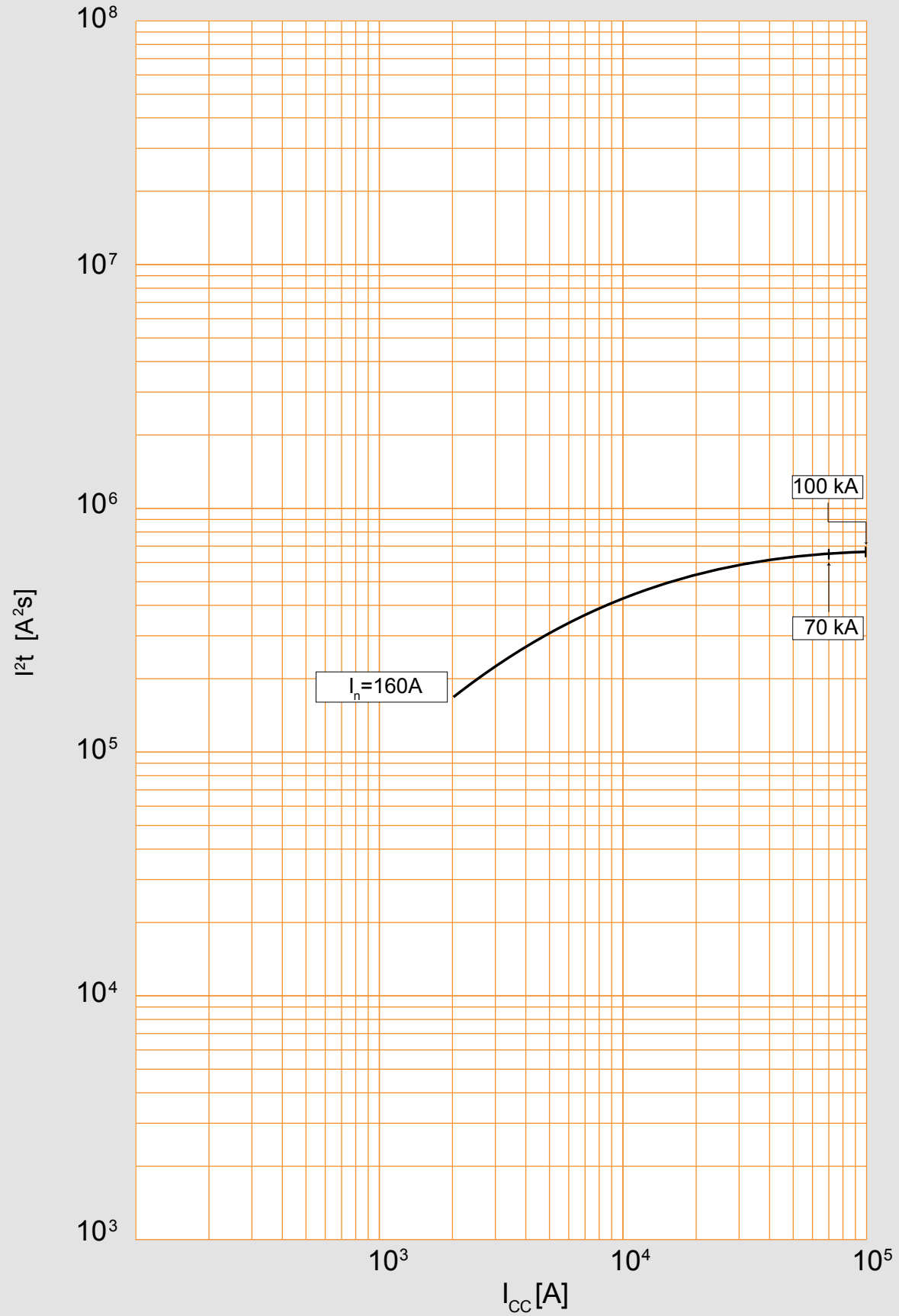
M3 160

Specific through energy curve (up to 50kA)



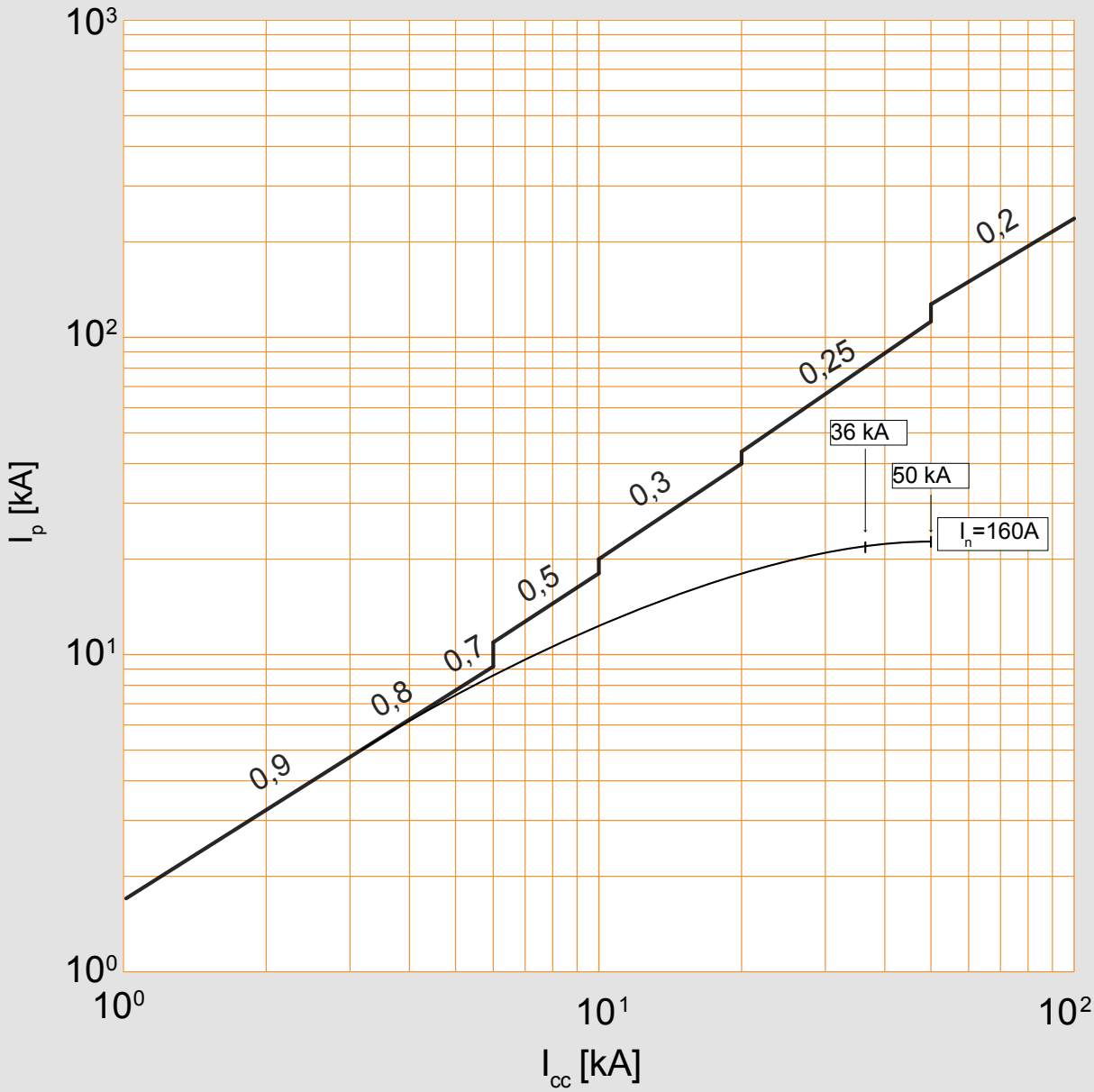
M3 160

Specific through energy curve (70-100kA)



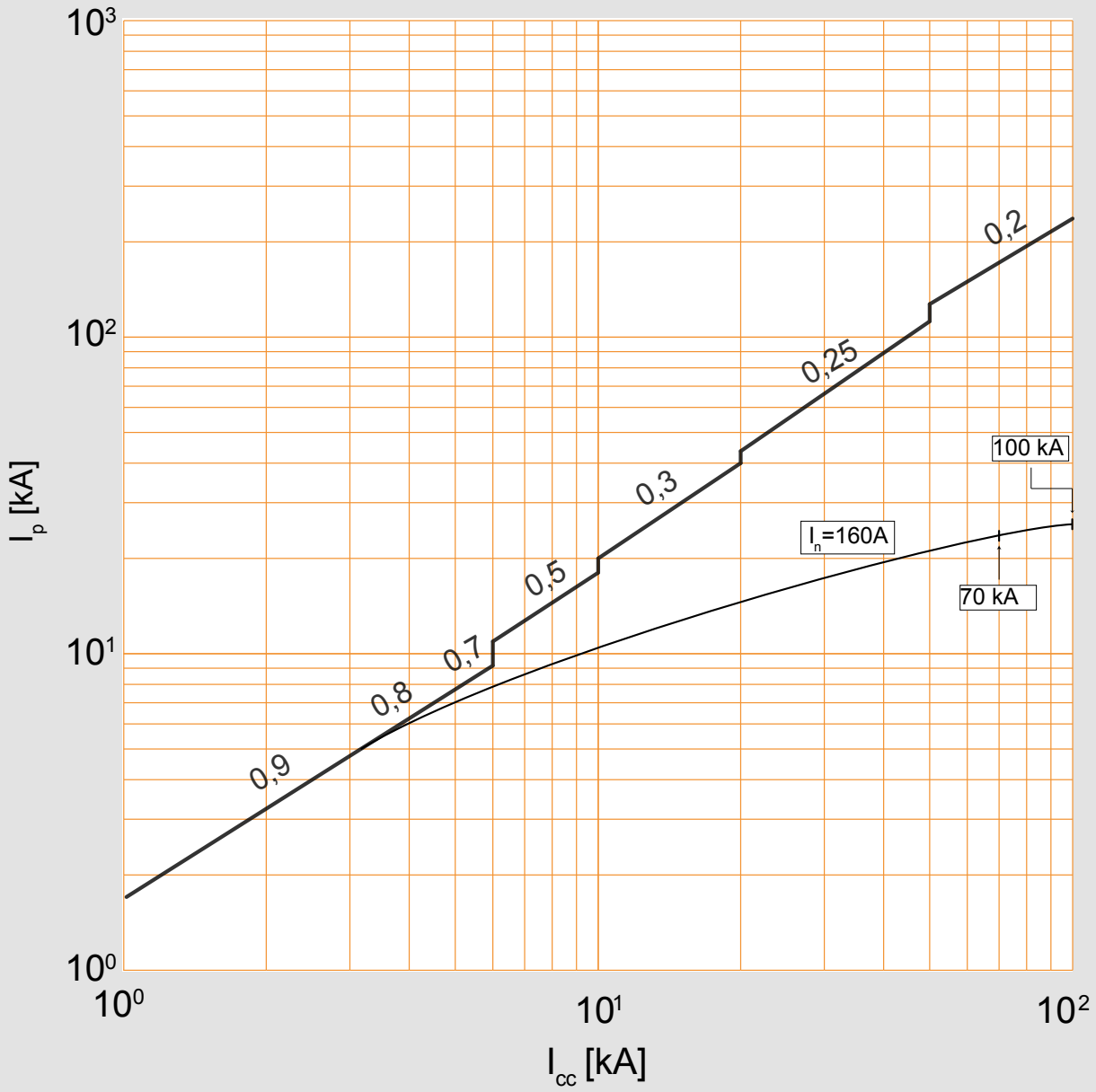
M3 160

Limitation curve (up to 50kA)



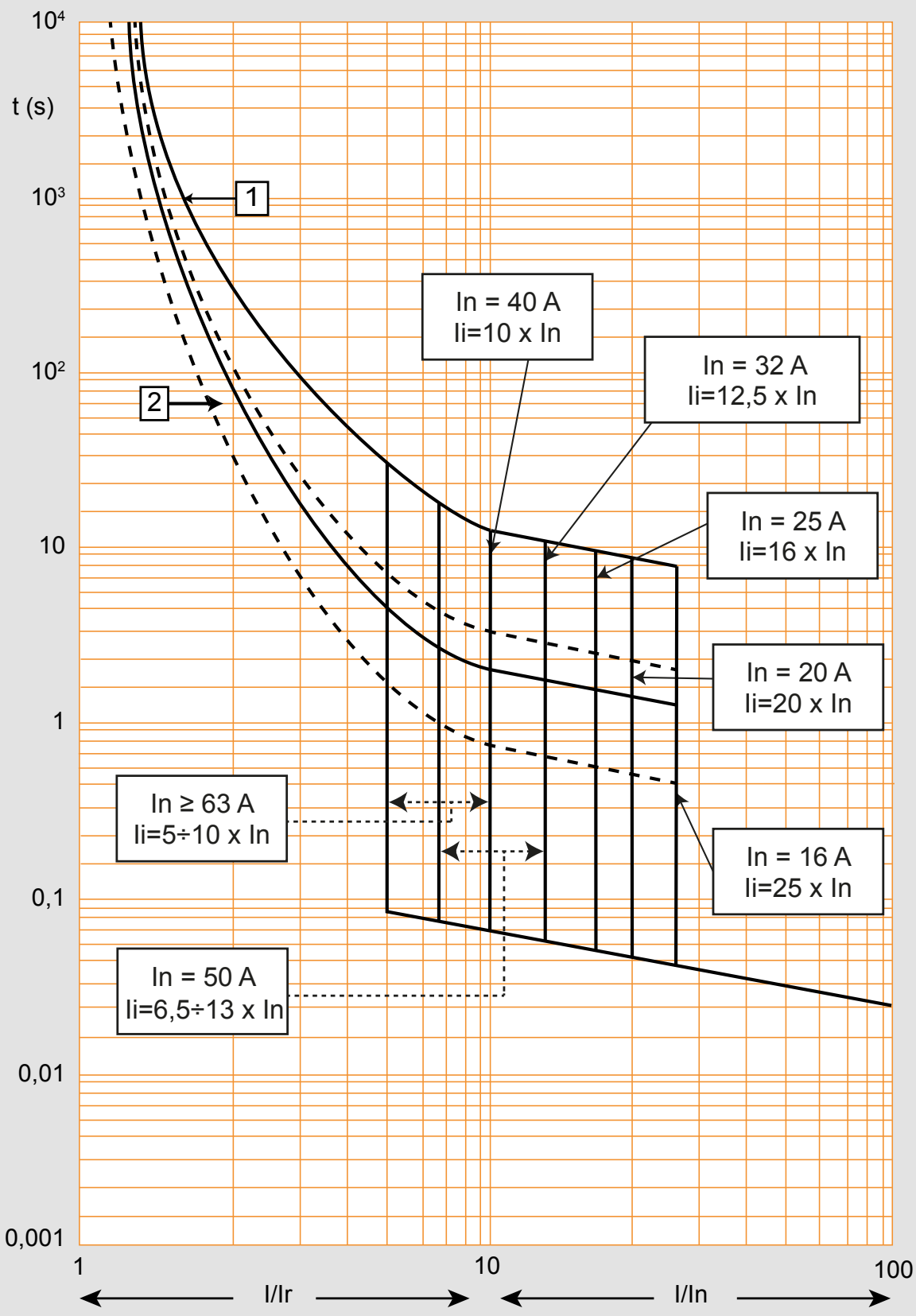
M3 160

Limitation curve (70-100kA)



M3 250 THERMAL MAGNETIC

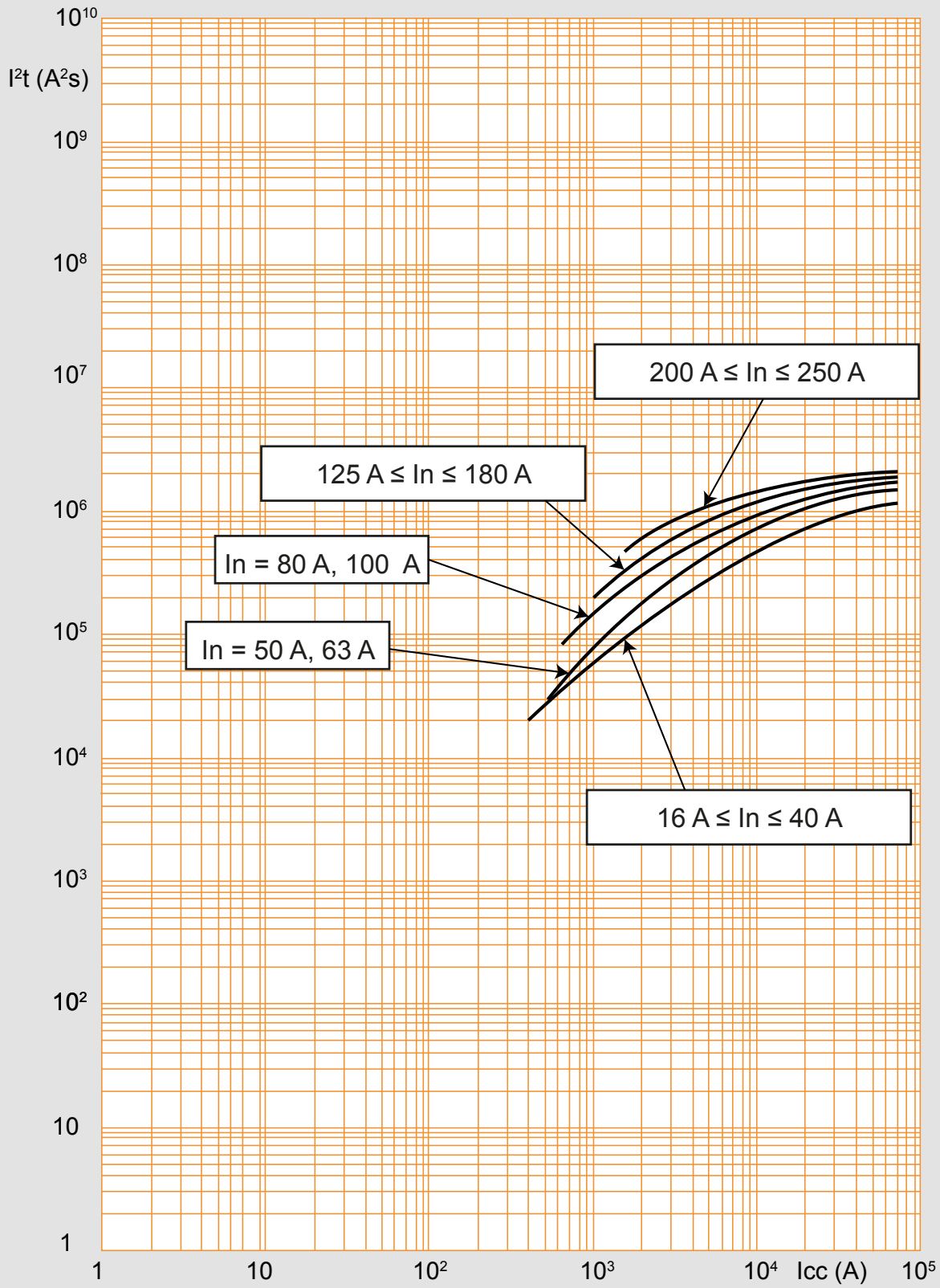
Current time tripping curve



1) "Cold" curve 2) "Hot" curve

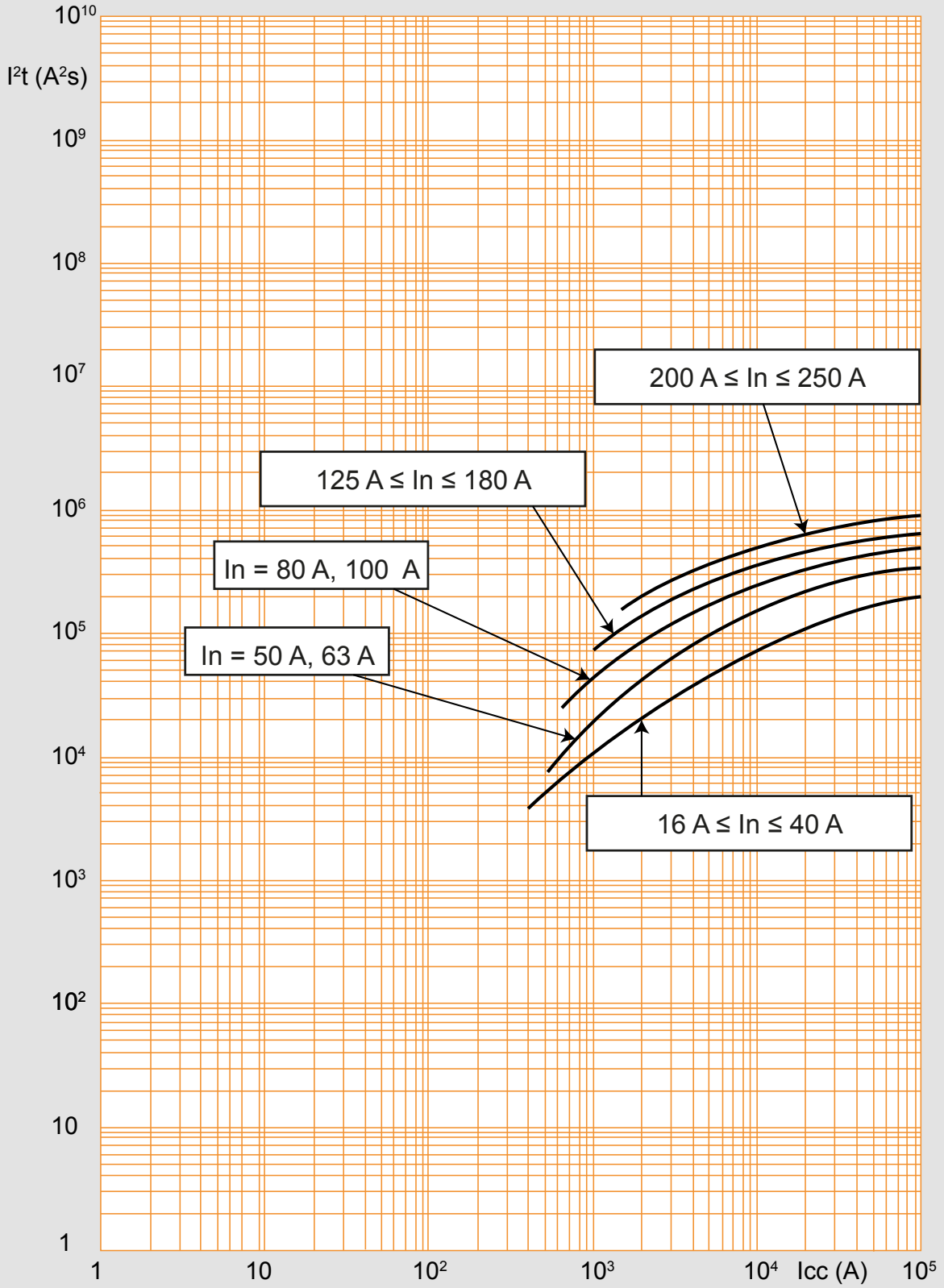
M3 250 THERMAL MAGNETIC

Specific through energy curve (up to 50kA)



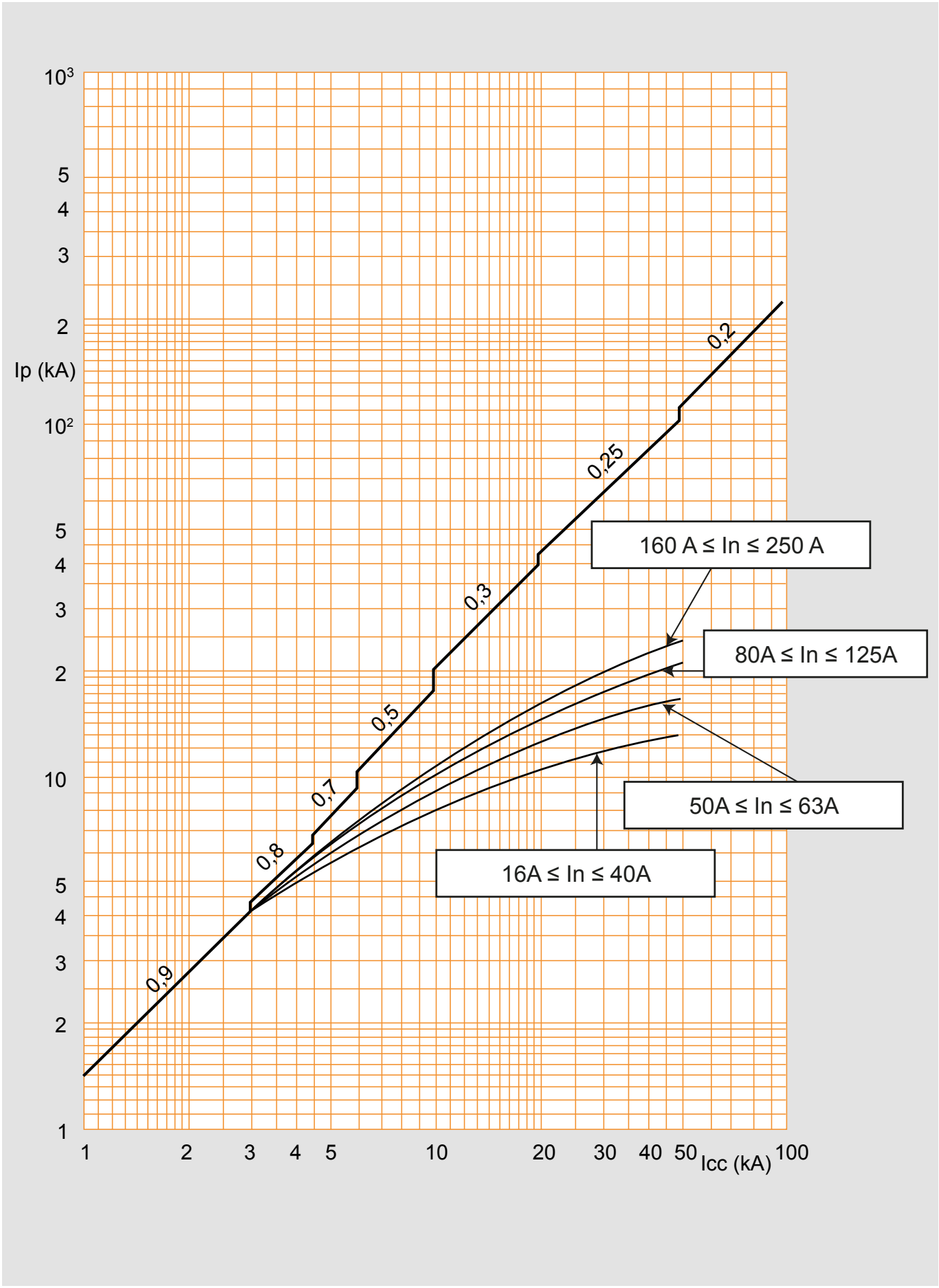
M3 250 THERMAL MAGNETIC

Specific through energy curve (70-100kA)



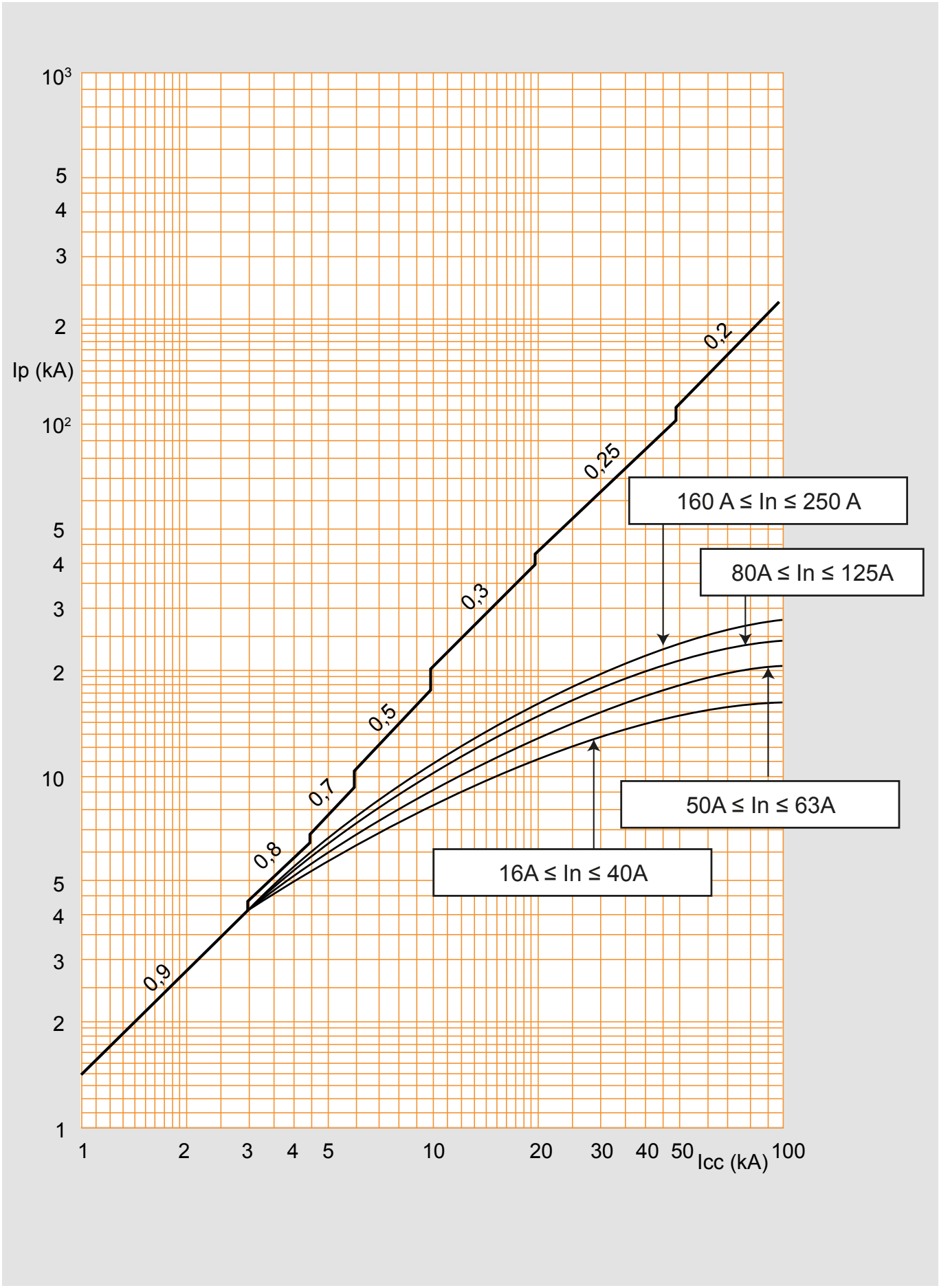
M3 250 THERMAL MAGNETIC

Limitation curve (up to 50kA)



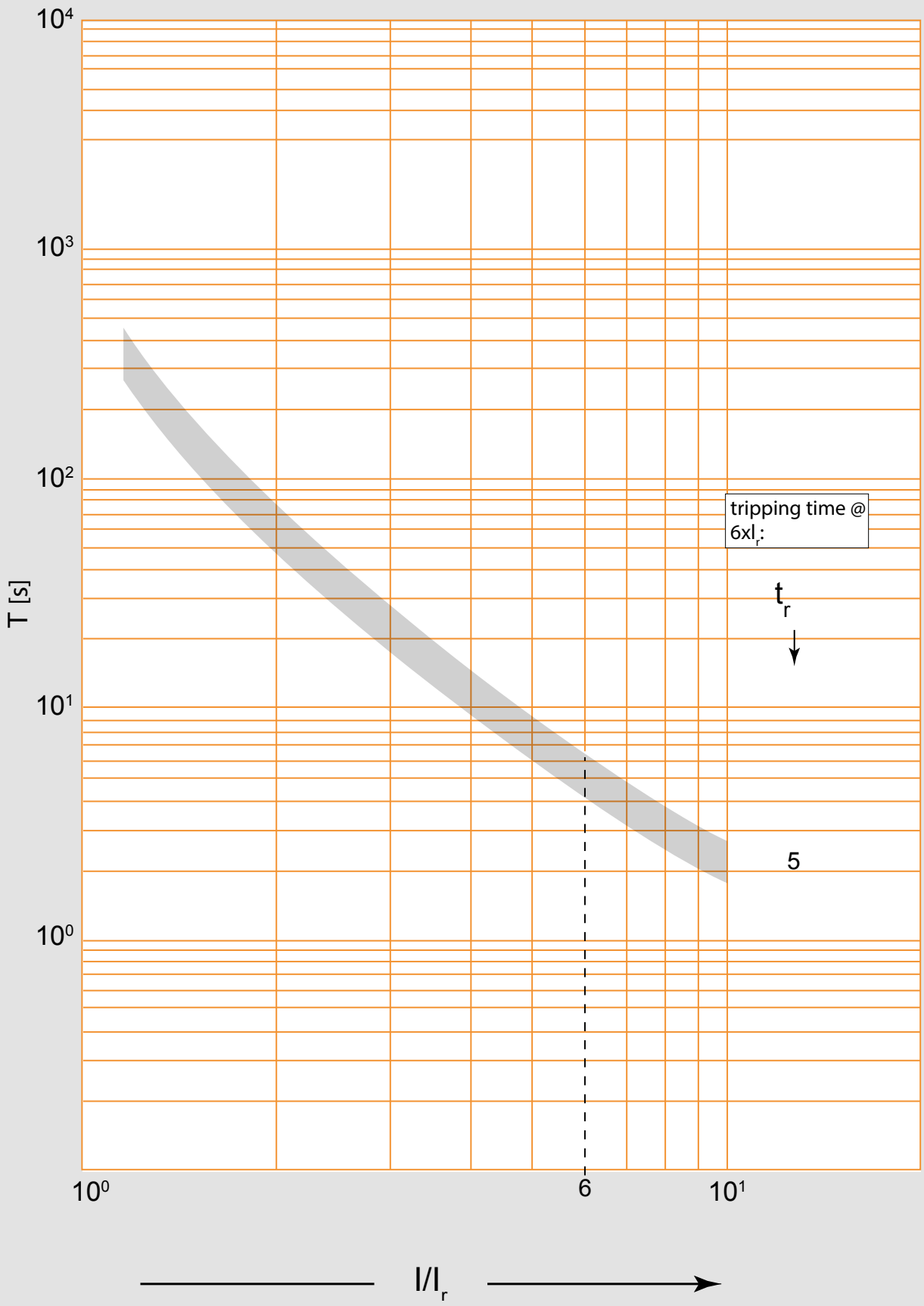
M3 250 THERMAL MAGNETIC

Limitation curve (70-100kA)



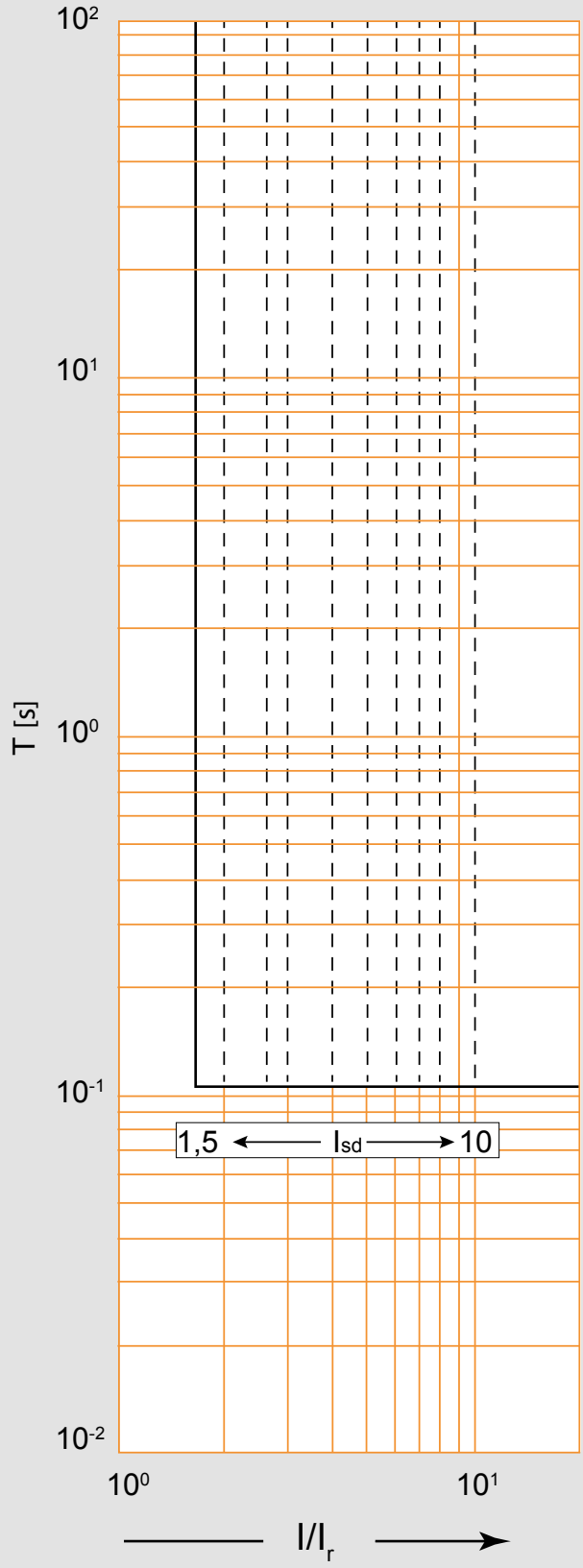
M3 250 ELECTRONIC

current time tripping curve (Li)



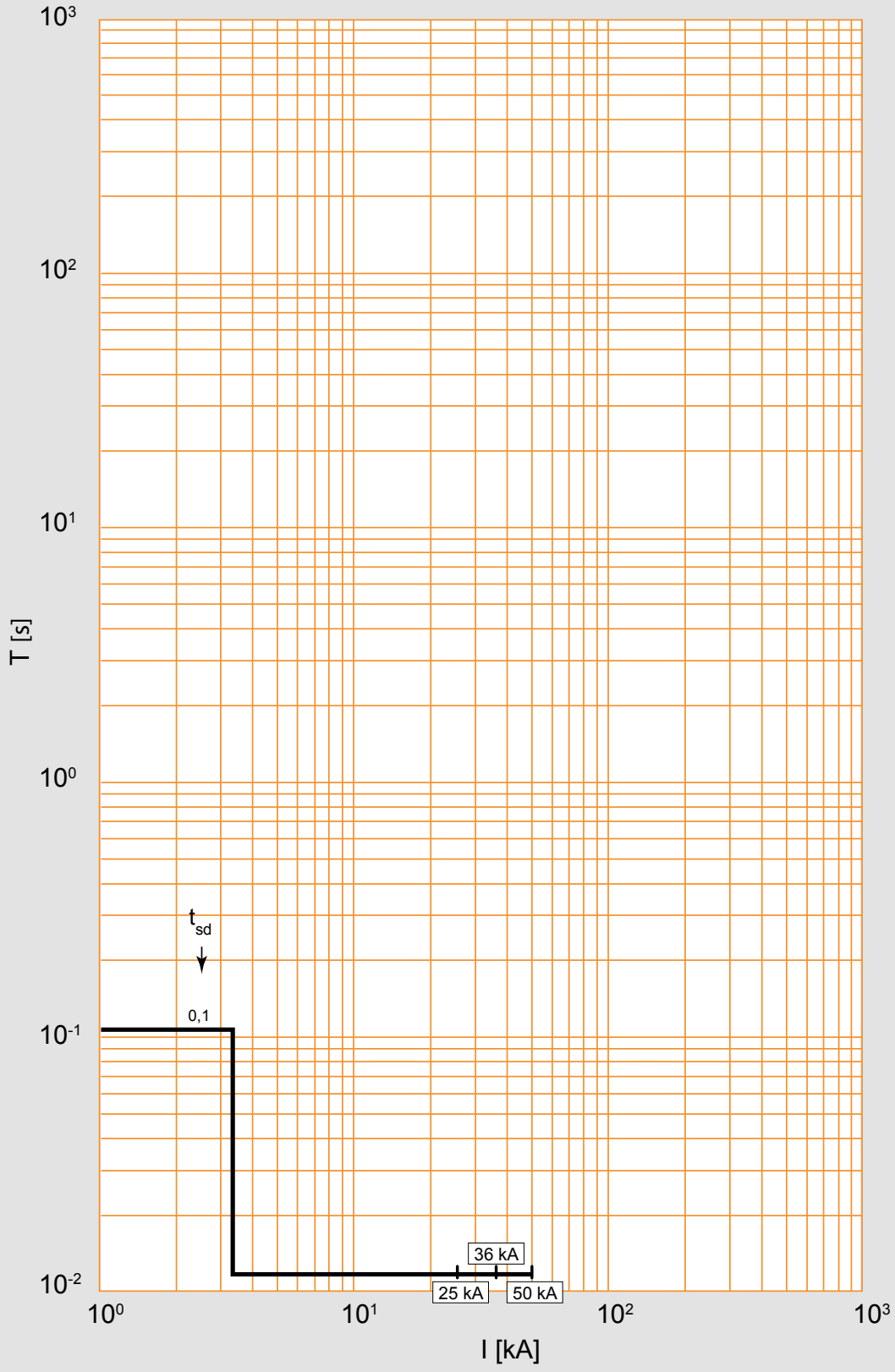
M3 250 ELECTRONIC

current time tripping curve (Li)



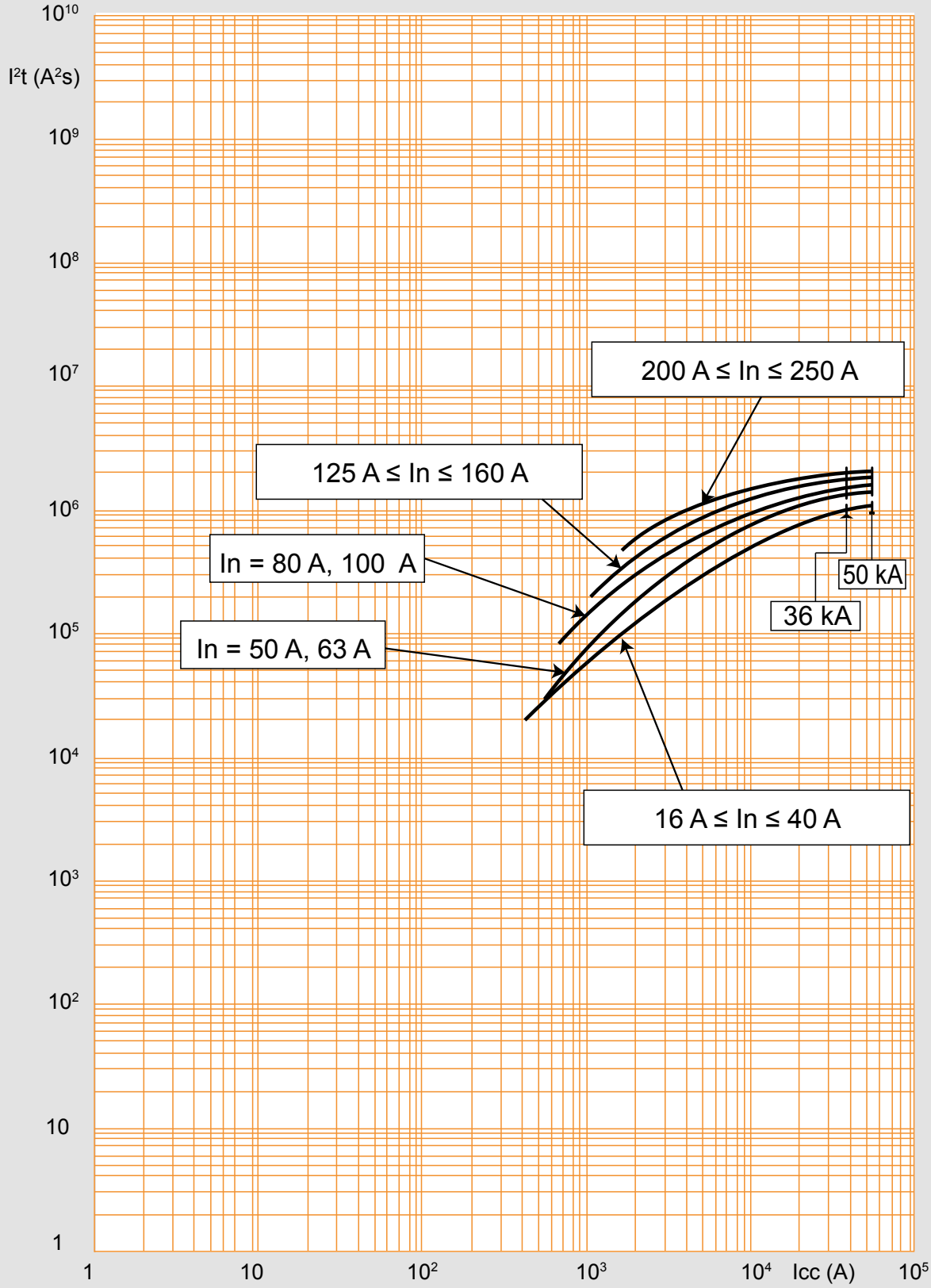
M3 250 ELECTRONIC

current time tripping curve (Li)



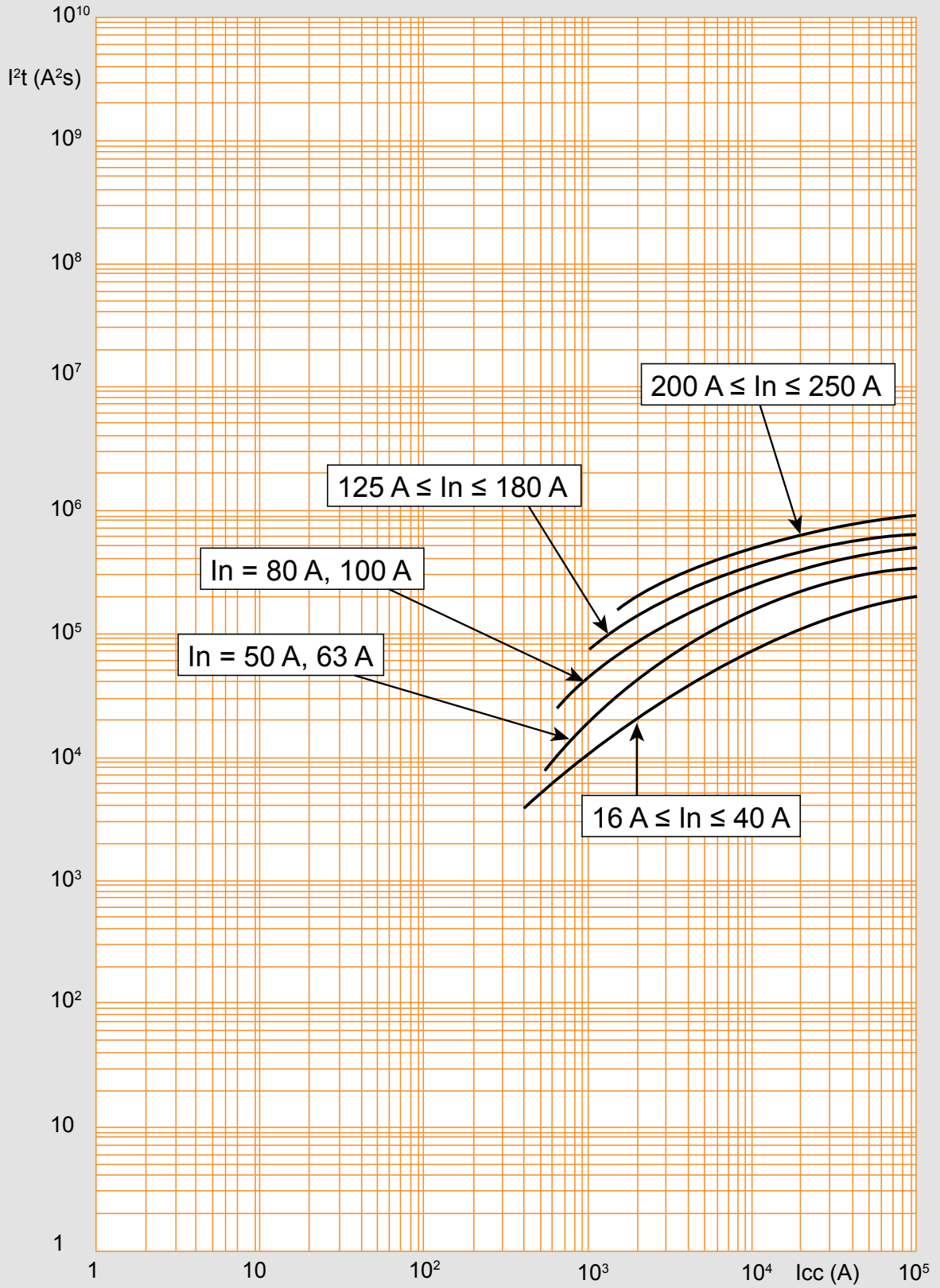
M3 250 ELECTRONIC

specific through energy curve (Li) up to 50 kA



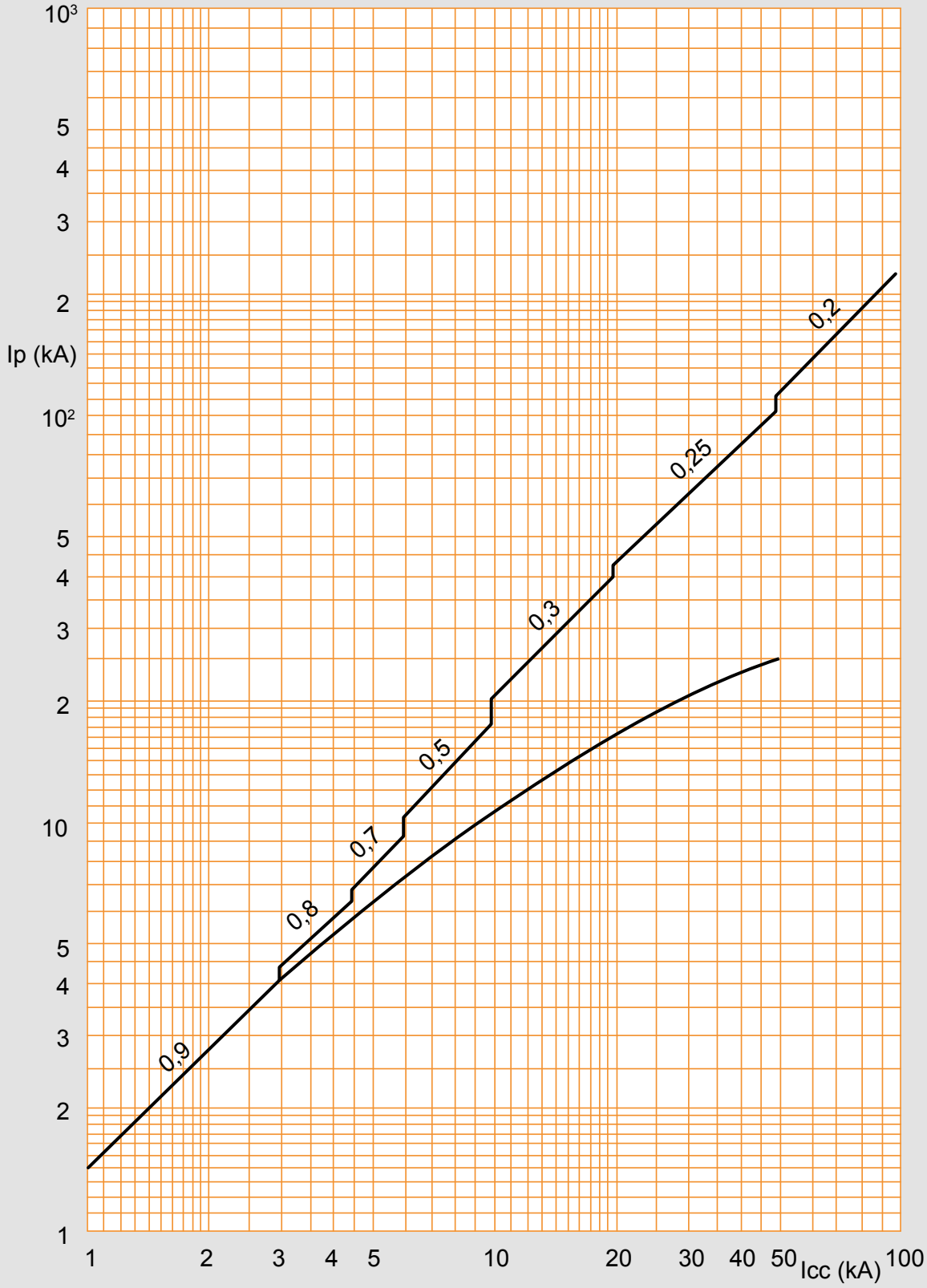
M3 250 ELECTRONIC

specific through energy curve (Li) 70-100kA



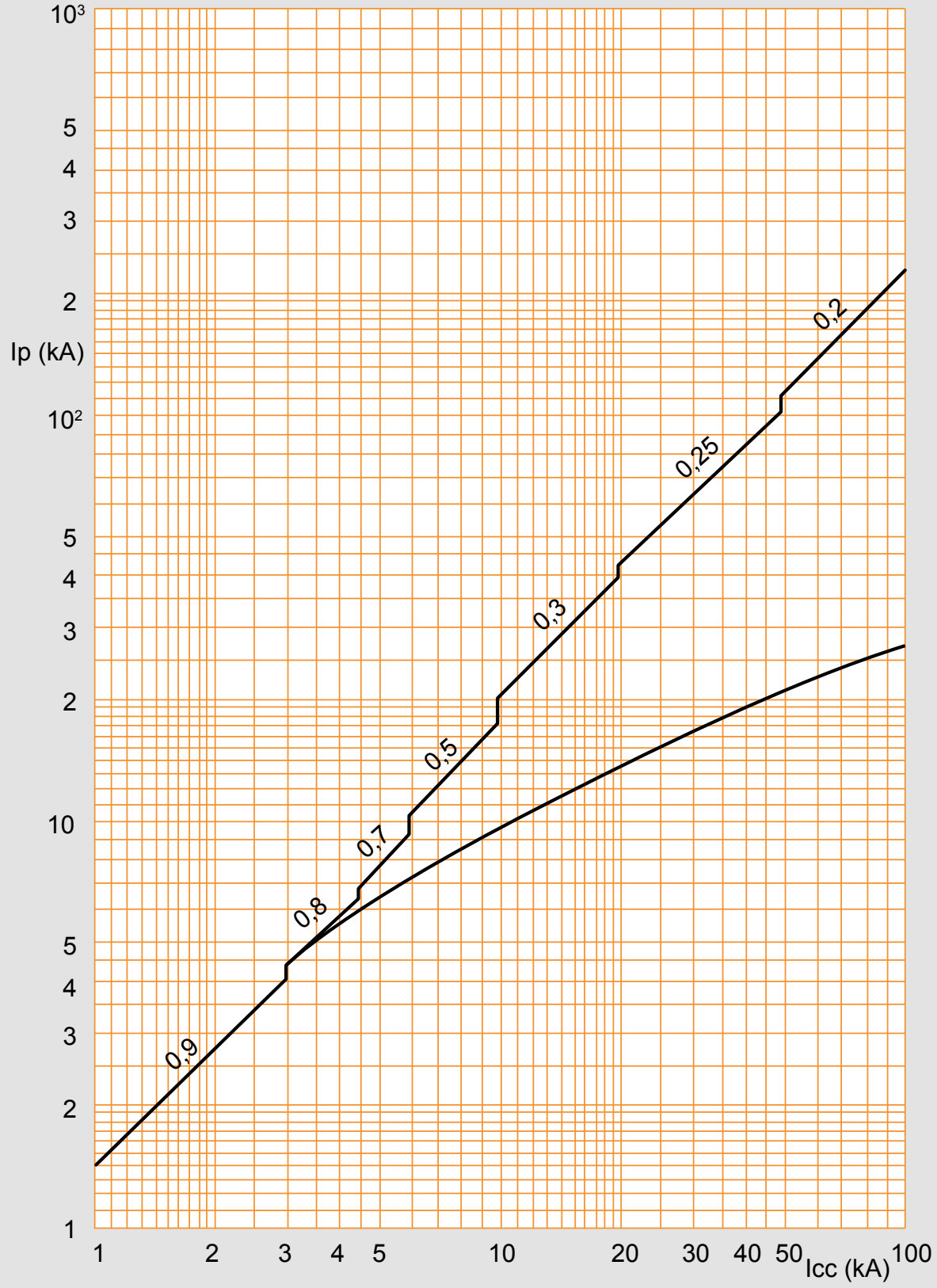
M3 250 ELECTRONIC

limitation curve (Li) up to 50 kA



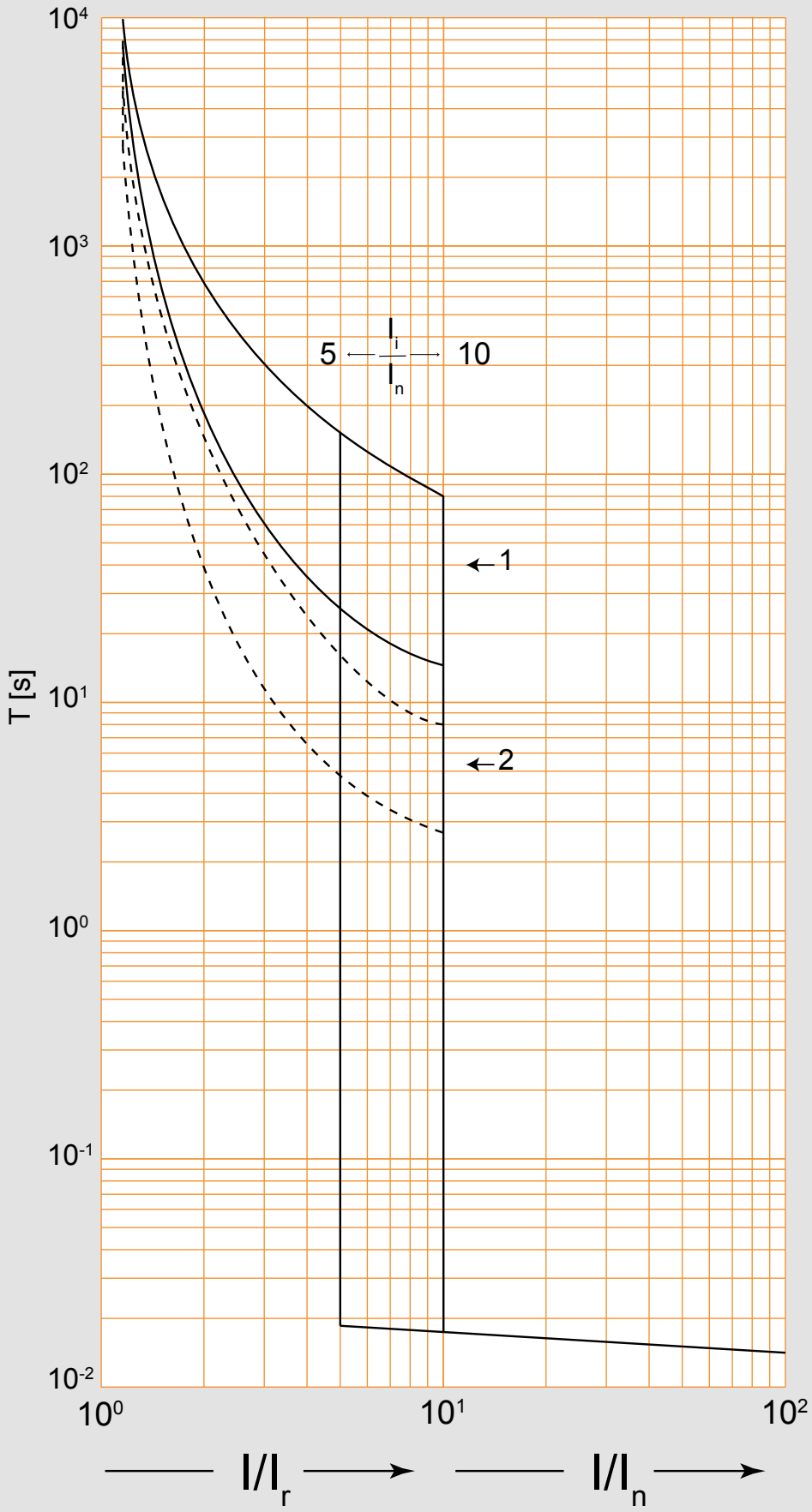
M3 250 ELECTRONIC

limitation curve (Li) 70-100 kA



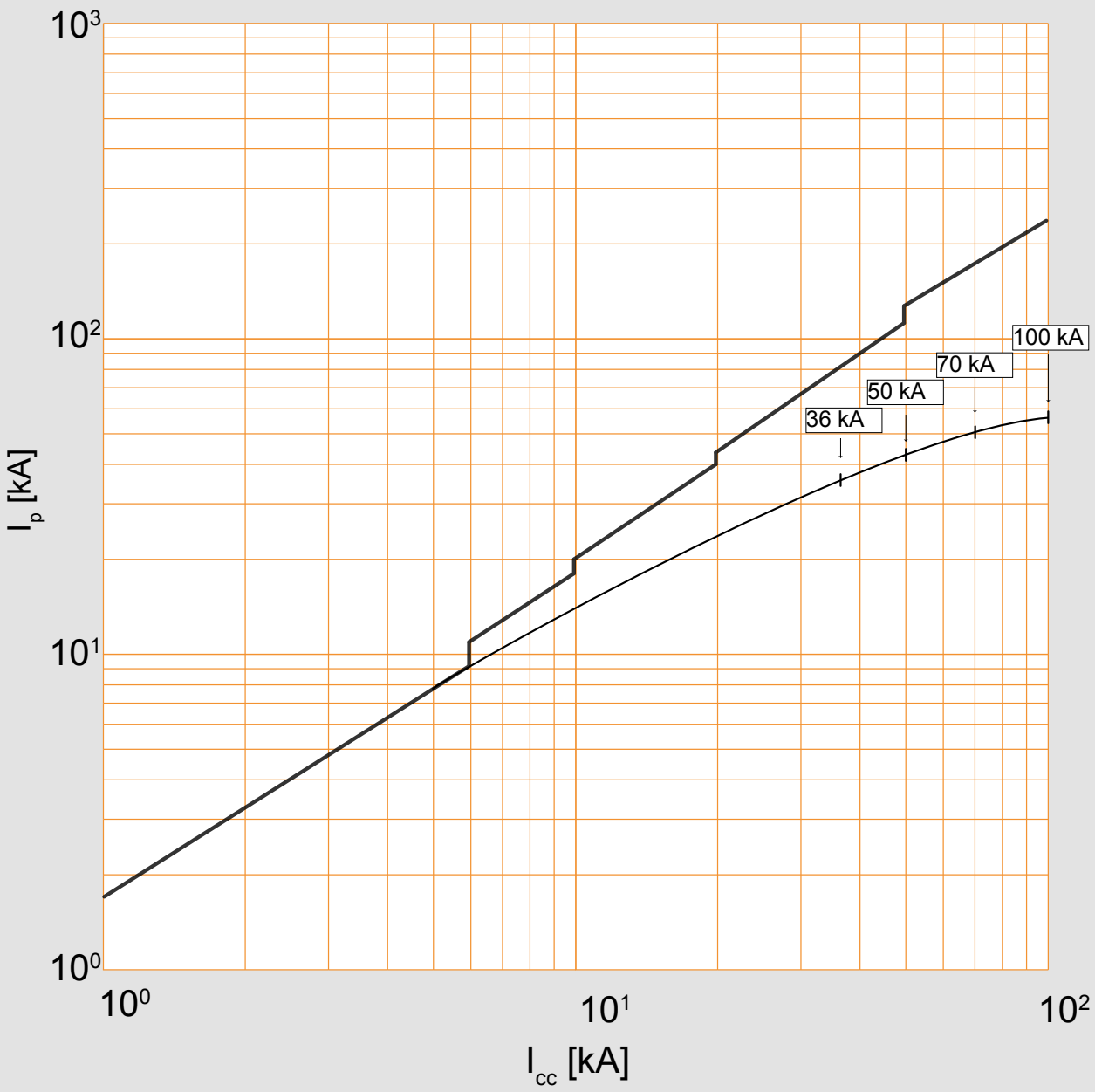
M4 630 THERMAL MAGNETIC

Current time tripping curve



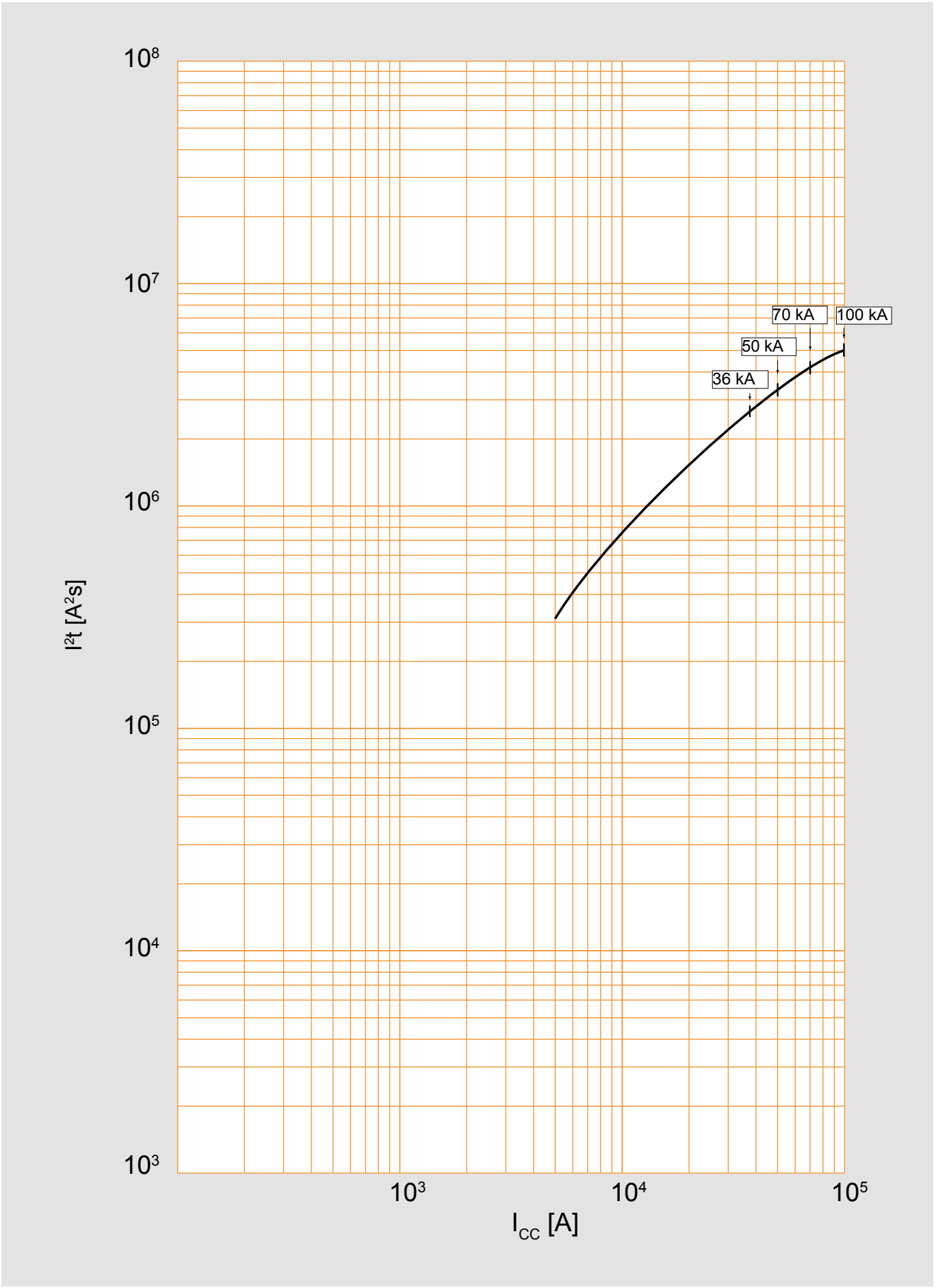
M4 630 THERMAL MAGNETIC

Specific through energy curve



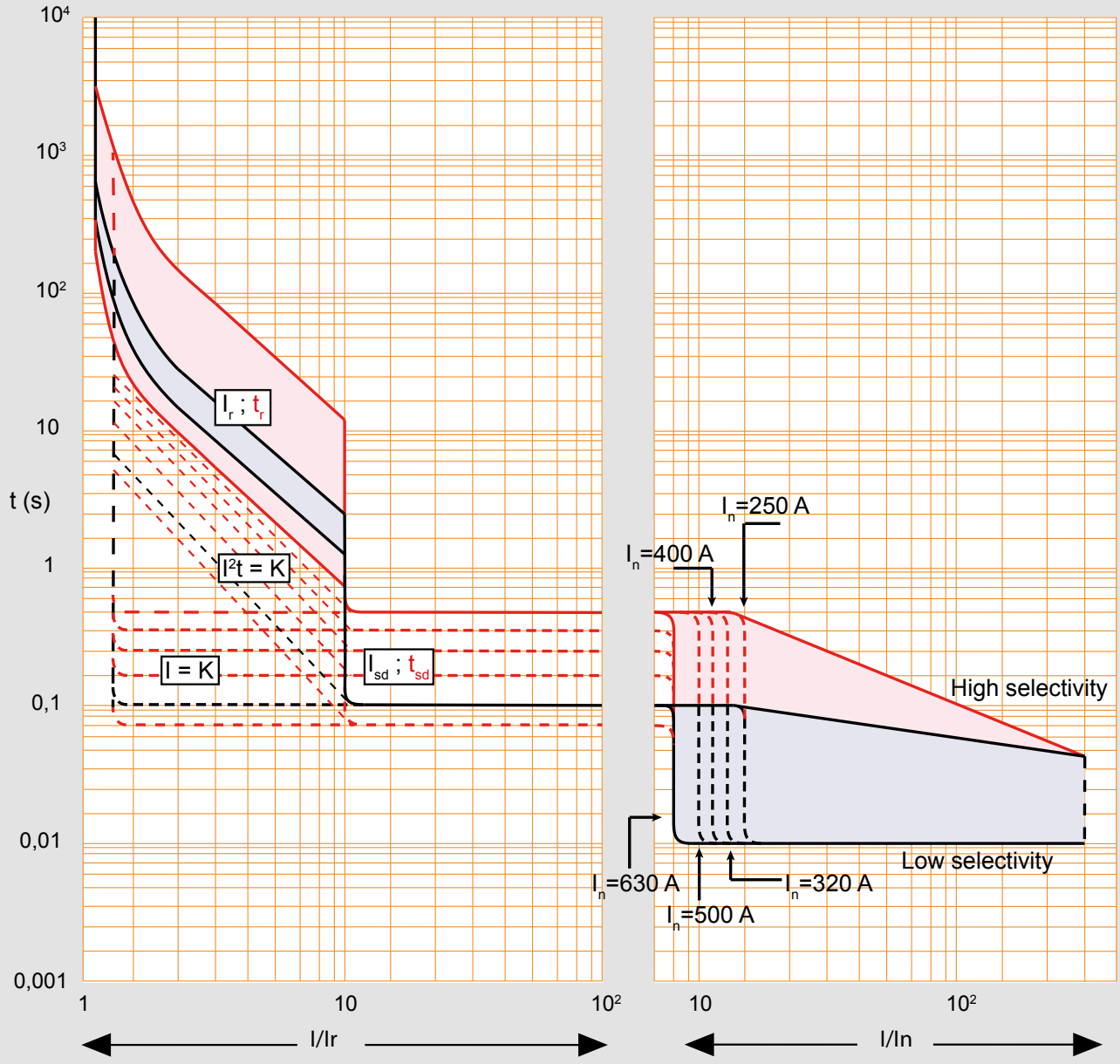
M4 630 THERMAL MAGNETIC

Limitation curve



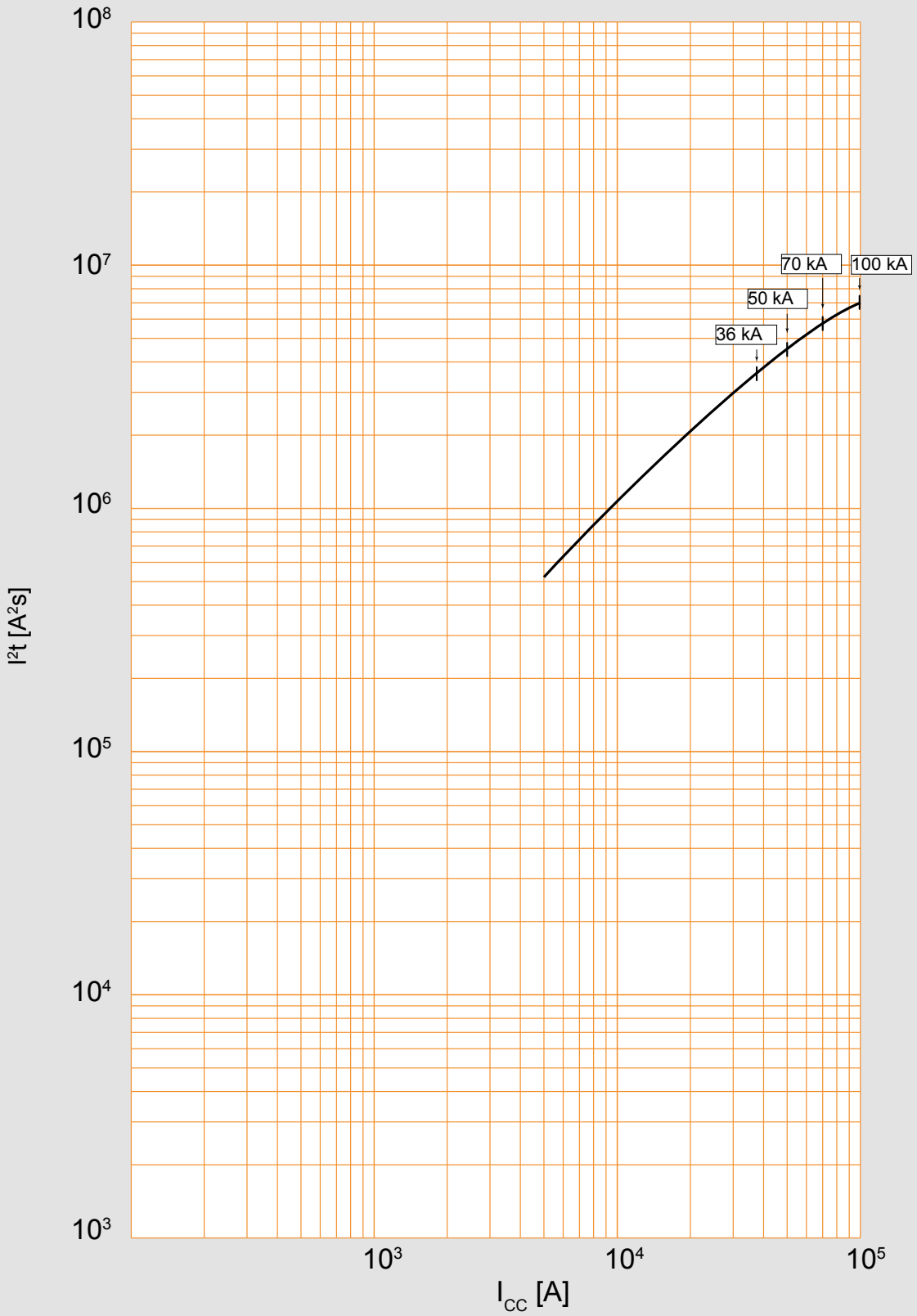
M4 630 ELECTRONIC

Current time tripping curve (Li - Lsi and Lsig)



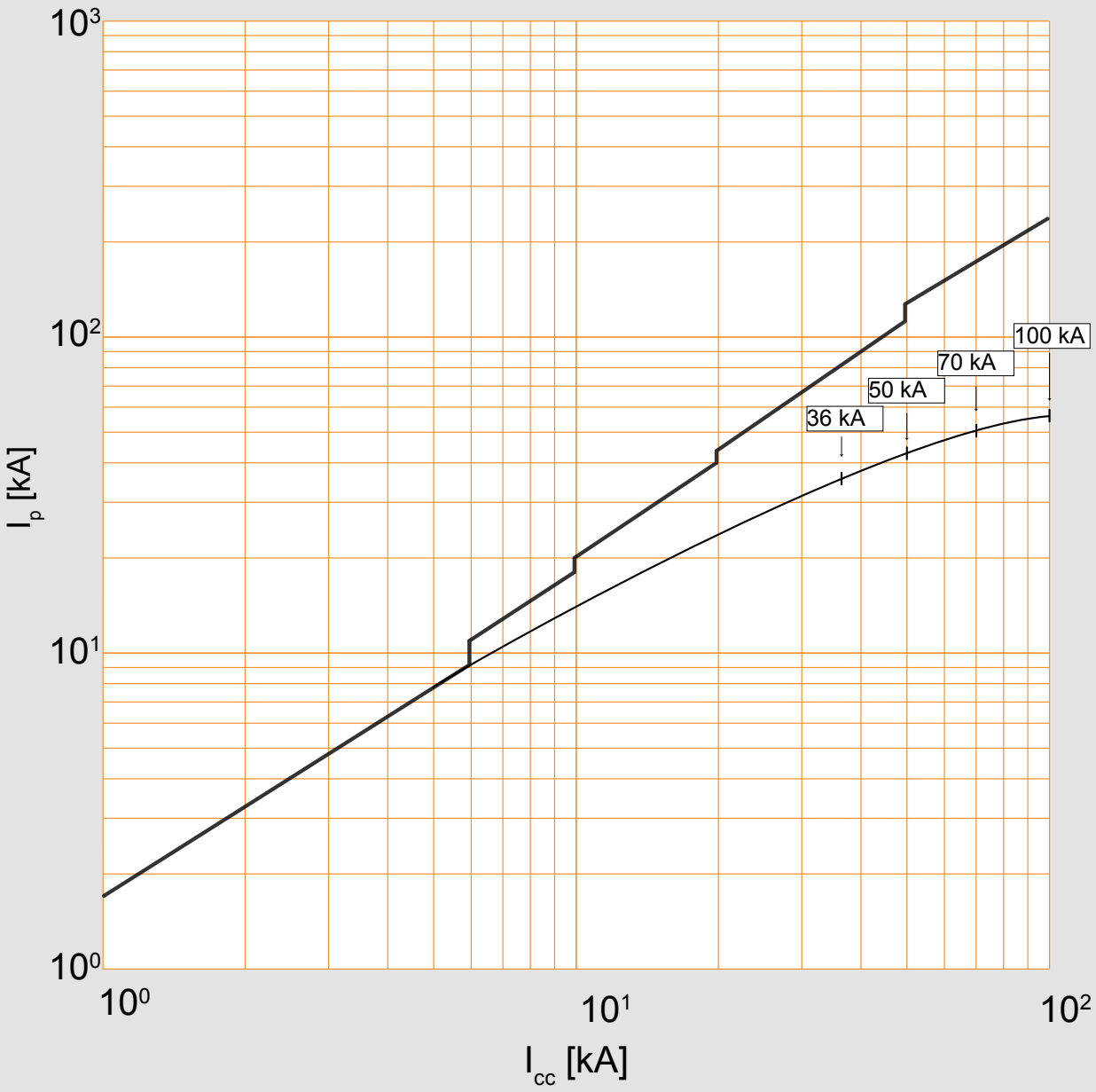
M4 630 ELECTRONIC

Specific through energy curve (Li - Lsi - Lsig)



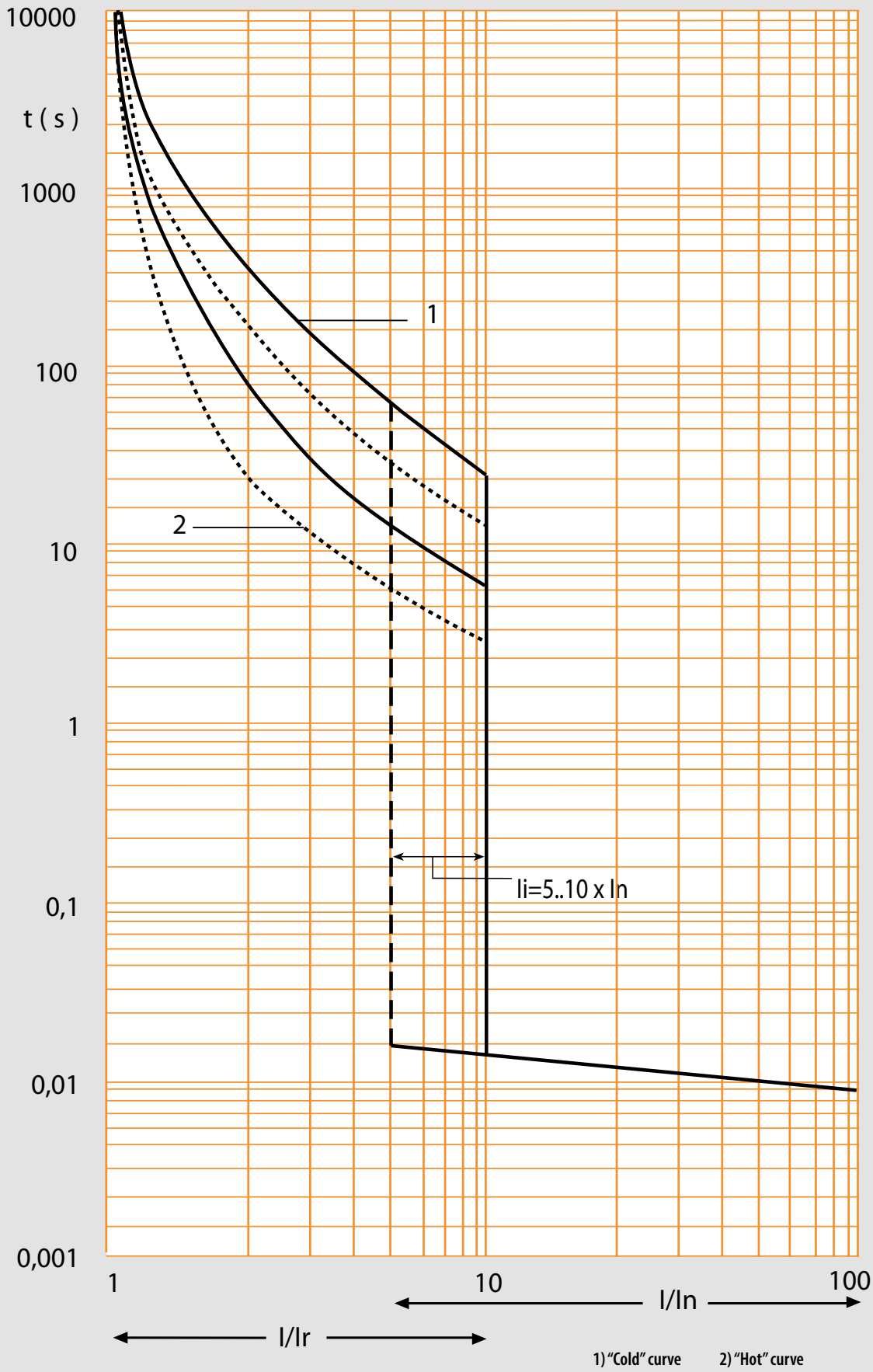
M4 630 ELECTRONIC

Limitation curve (Li - Lsi - Lsig)



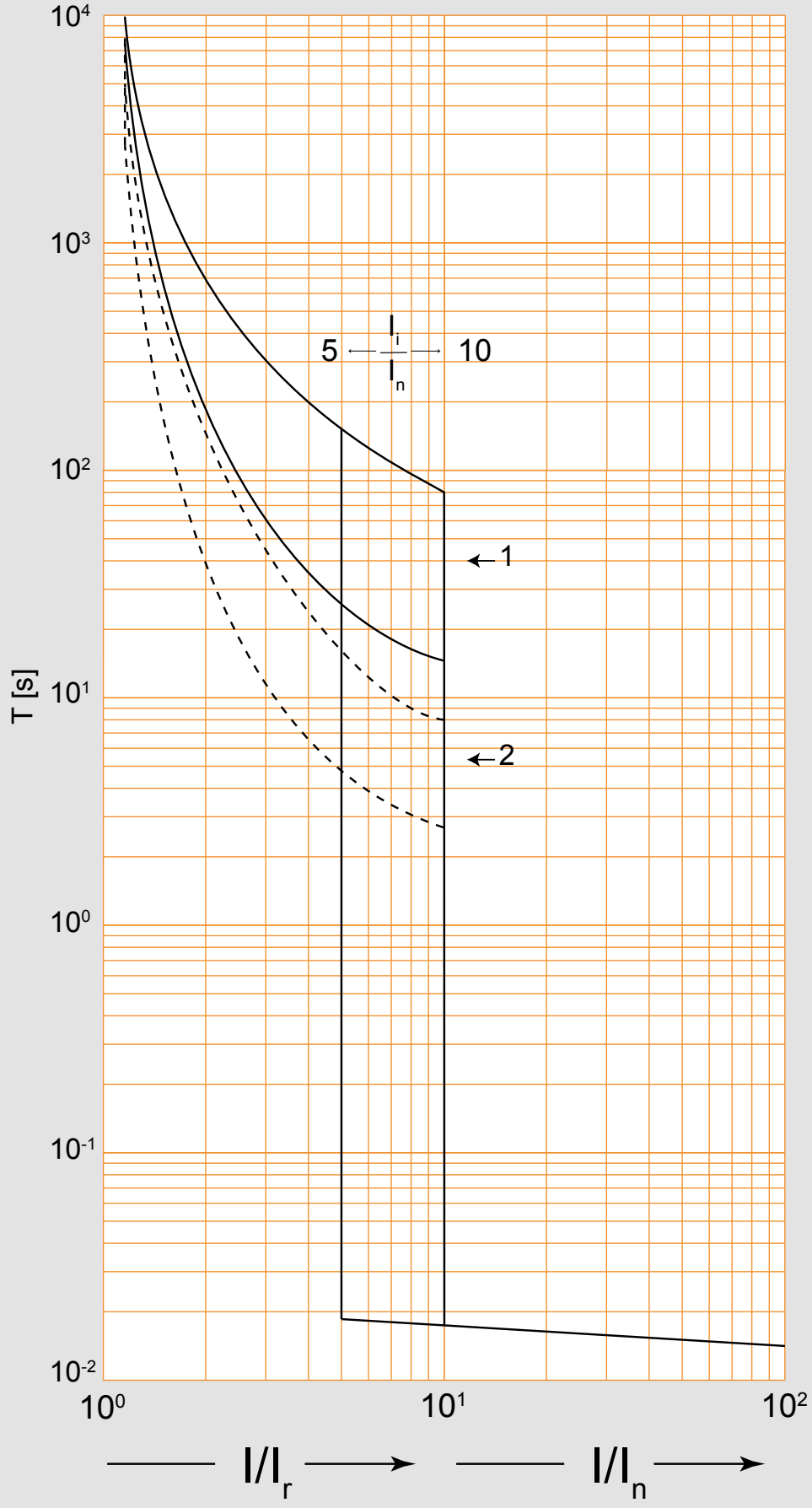
M5 1600 THERMAL MAGNETIC

Current time tripping curve (In =630-800A)



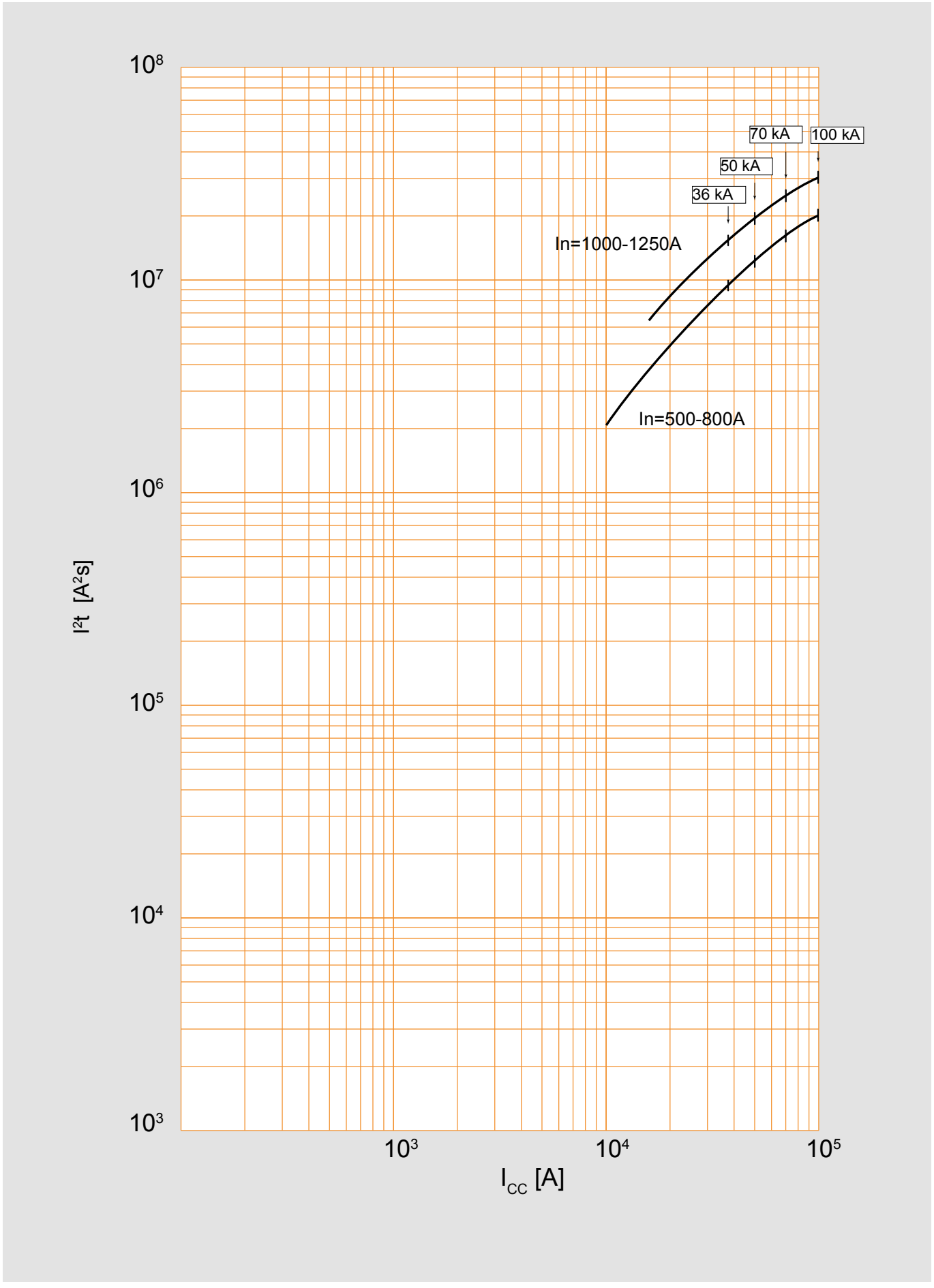
M5 1600 THERMAL MAGNETIC

Current time tripping curve (In =1000-1250A)



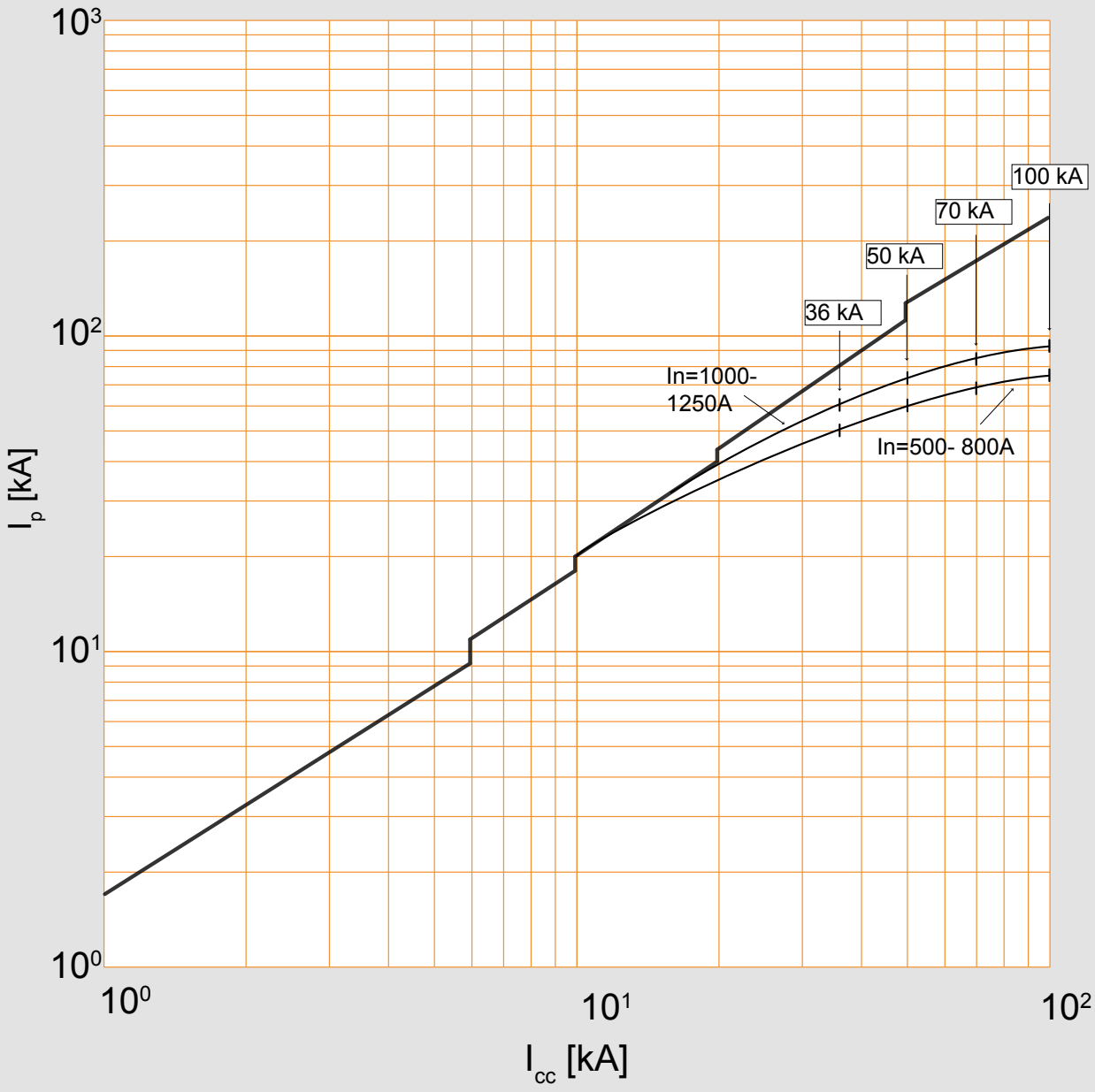
M5 1600 THERMAL MAGNETIC

Specific through energy curve



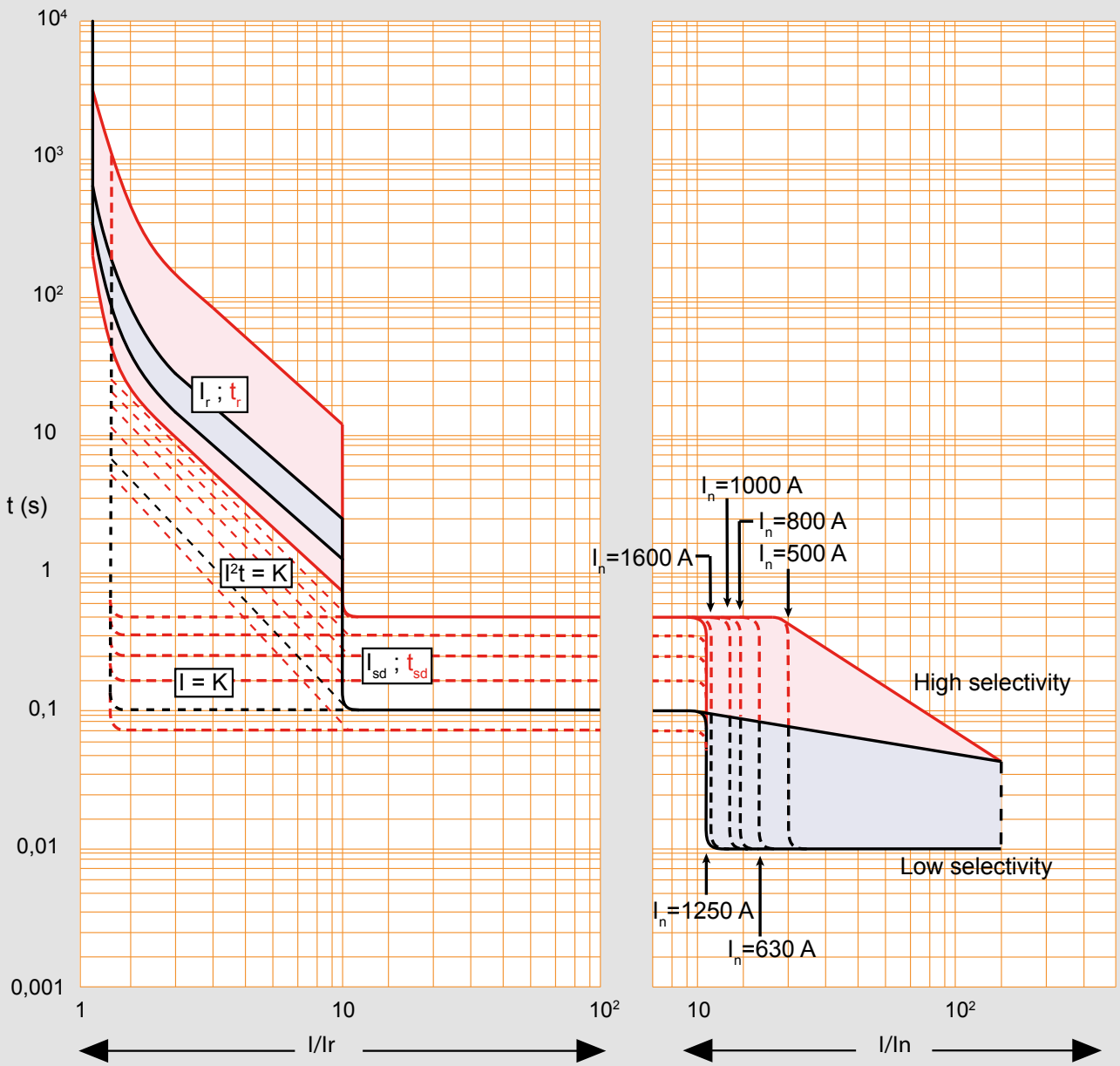
M5 1600 THERMAL MAGNETIC

Limitation curve



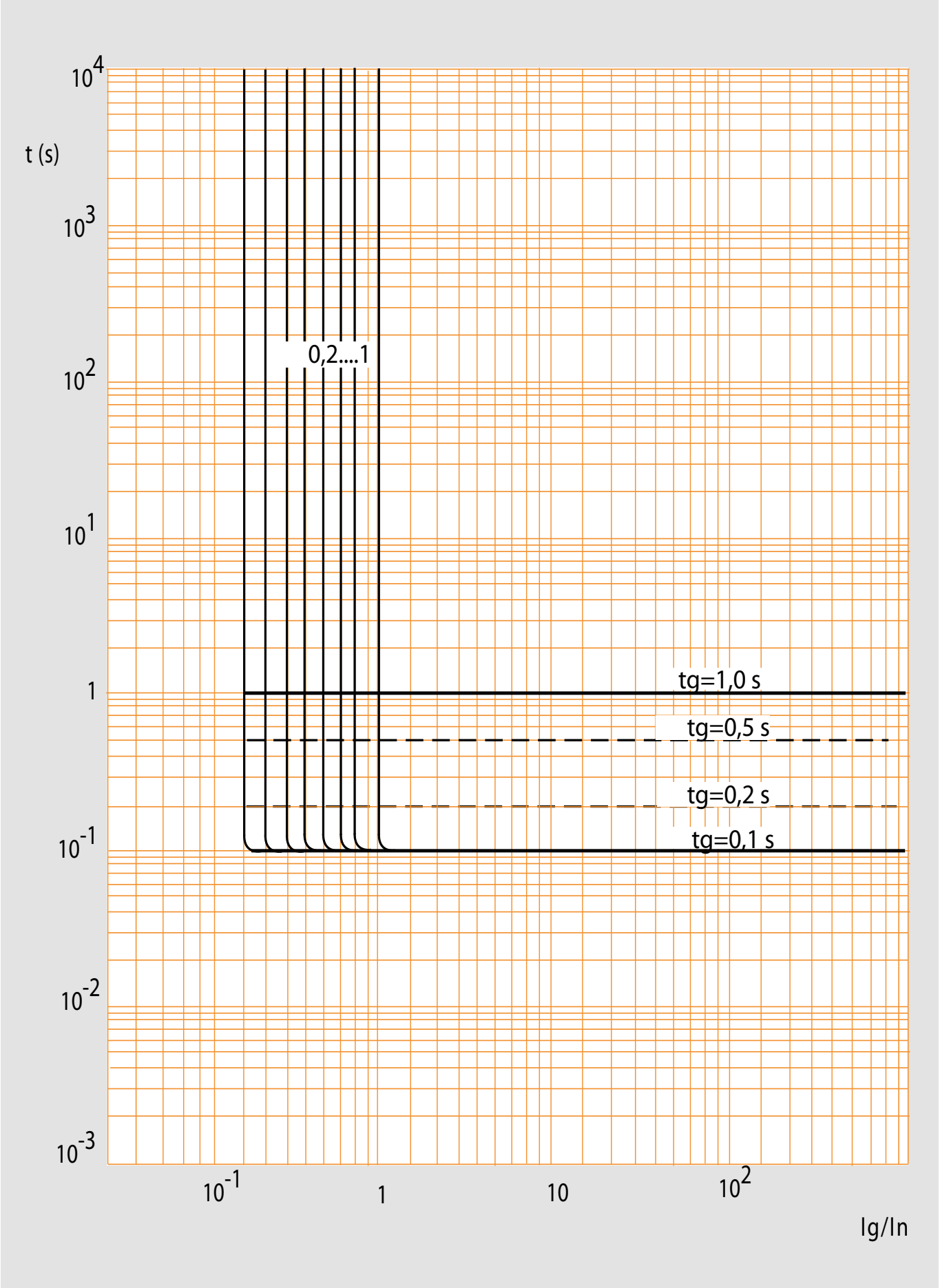
M5 1600 ELECTRONIC

Current time tripping curve (Li - Lsi - Lsig)



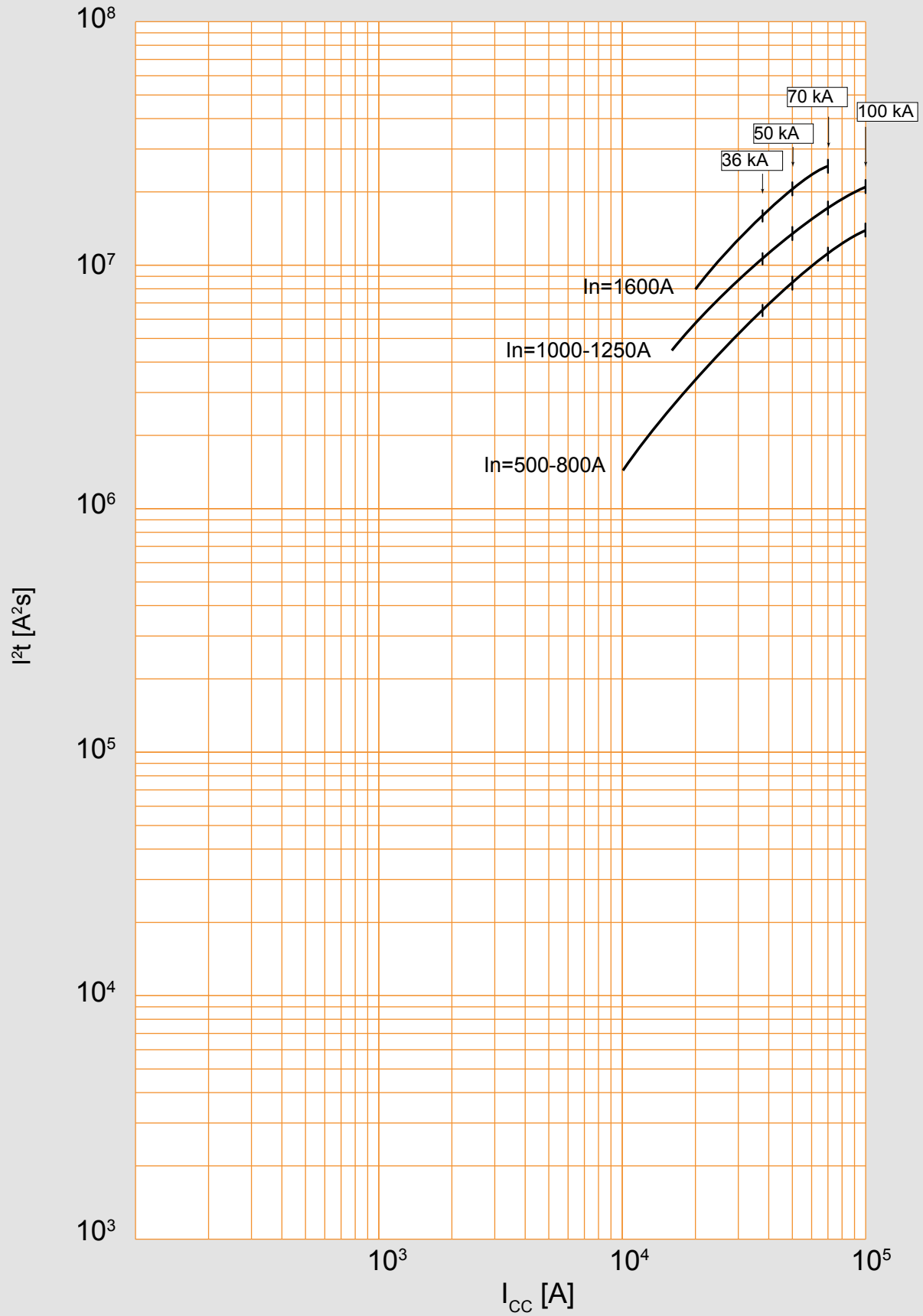
M5 1600 ELECTRONIC

Earth fault protection curve (Li - Lsi - Isig)



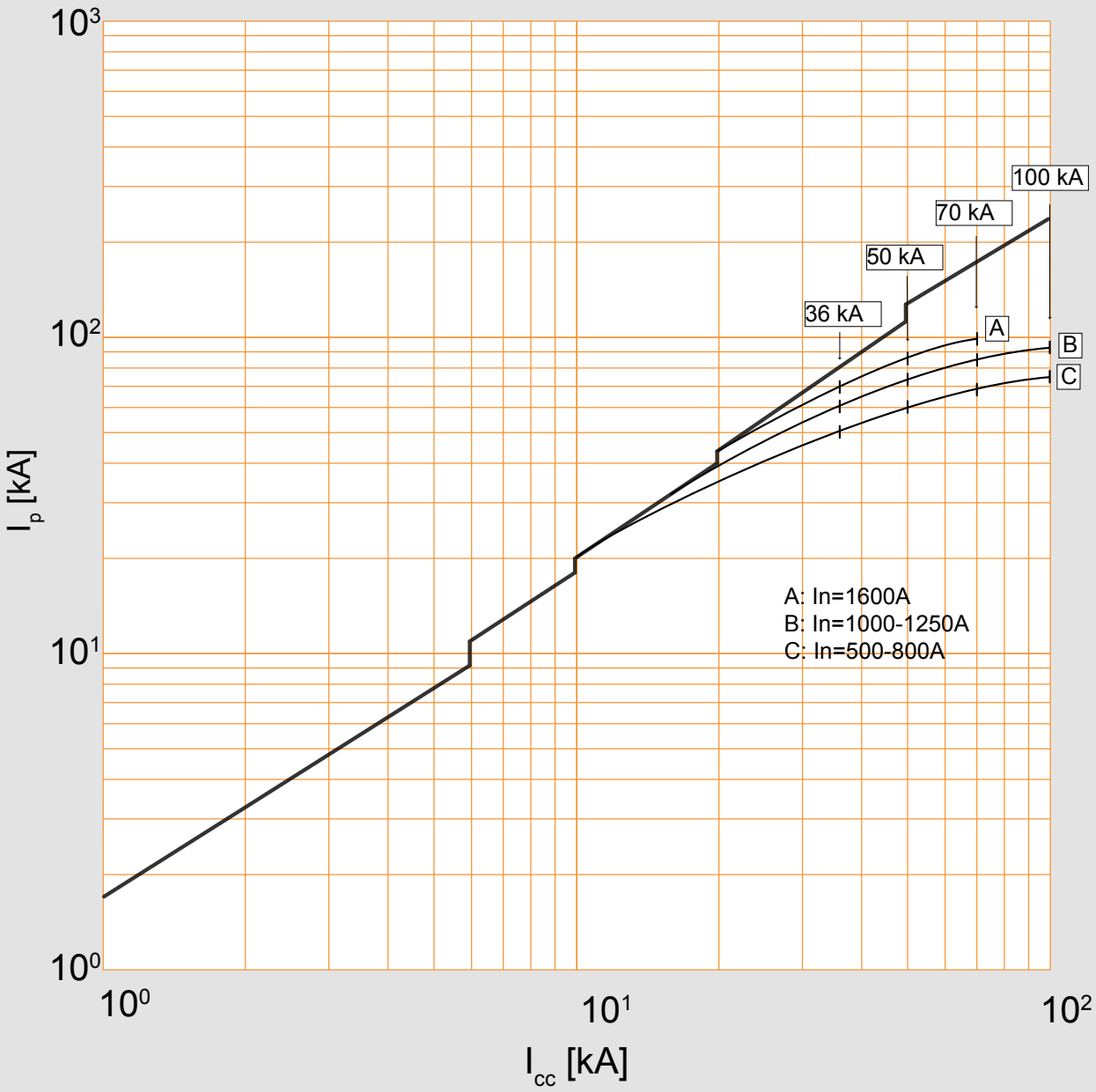
M5 1600 ELECTRONIC

Specific through energy curve (Li - Lsi - Lsig)



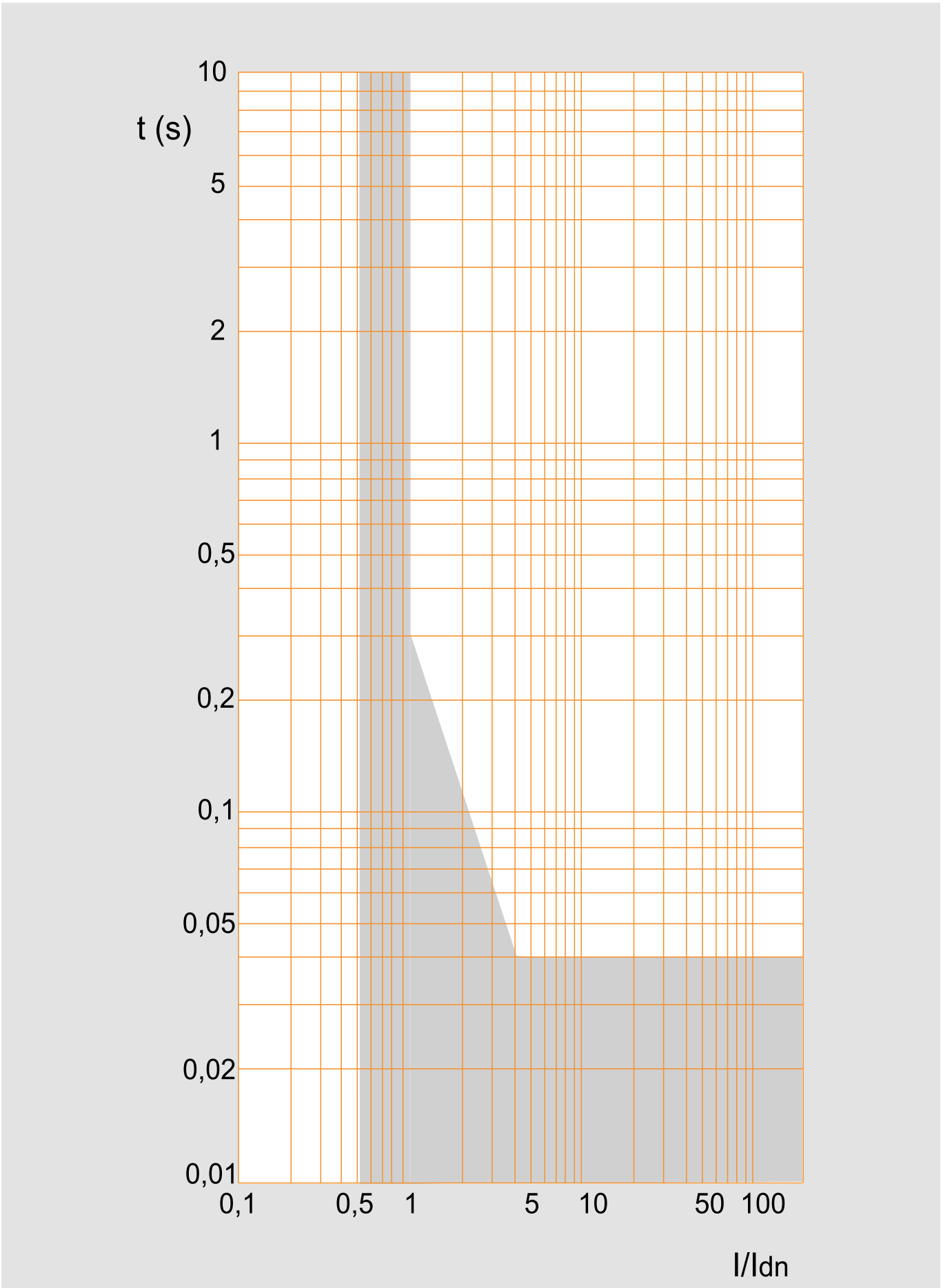
M5 1600 ELECTRONIC

Limitation curve (Li - Lsi - Isig)



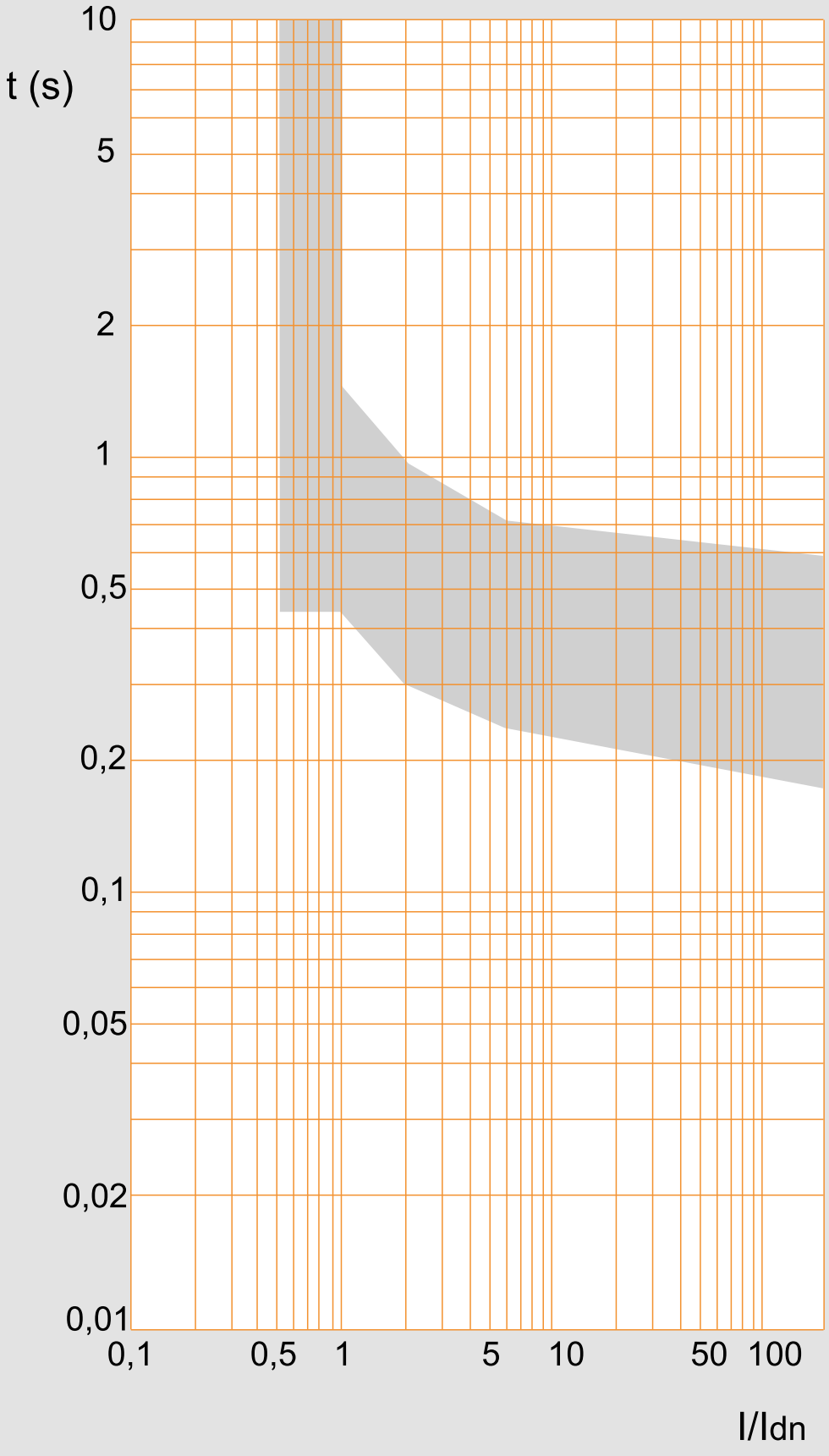
GL/GS160-250-400-630

Earth-leakage tripping curve (INSTANTANEOUS TRIPPING)



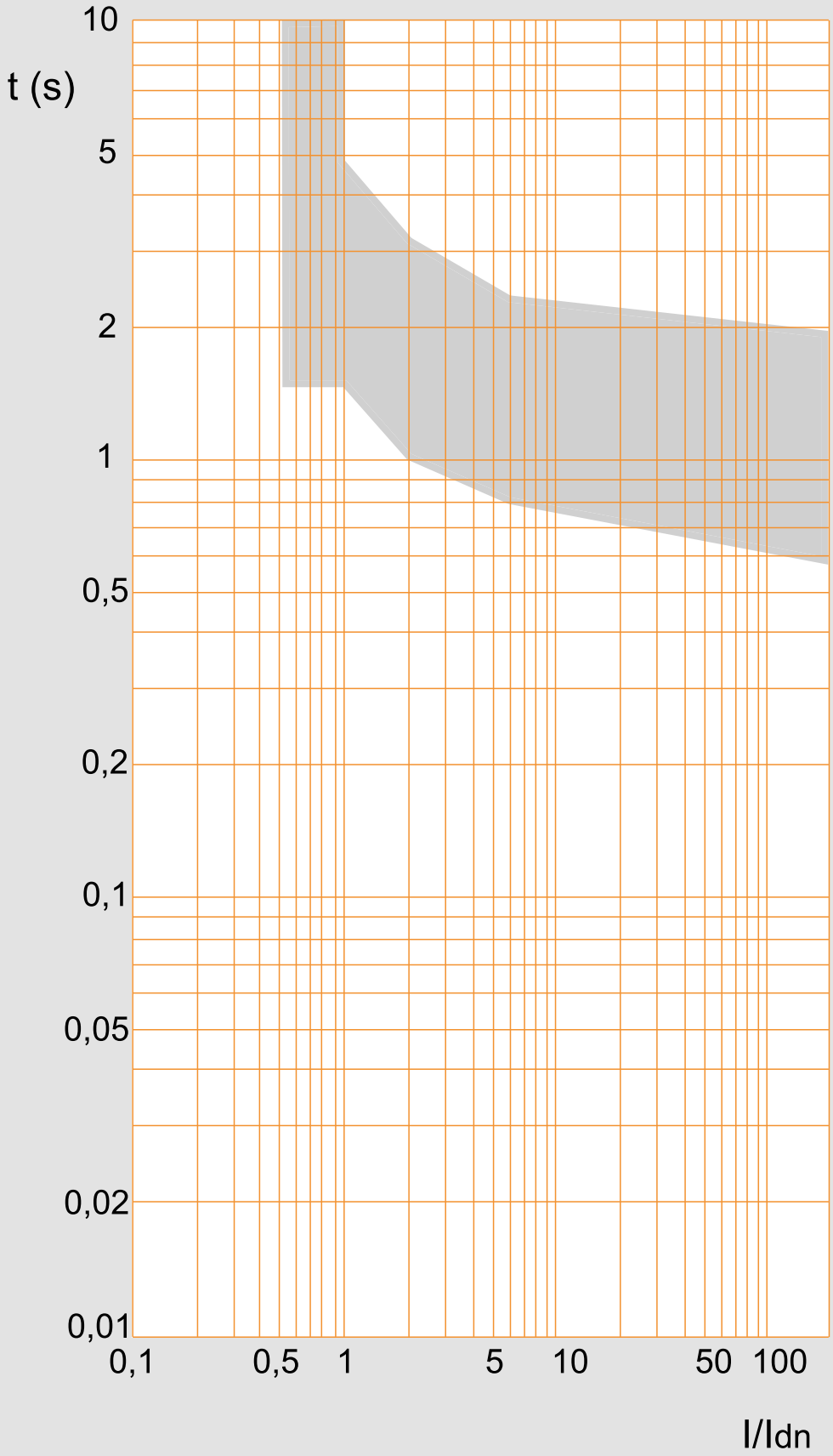
GL/GS160-250-400-630

Earth-leakage tripping curve (ADJUSTMENT 0.3 s)



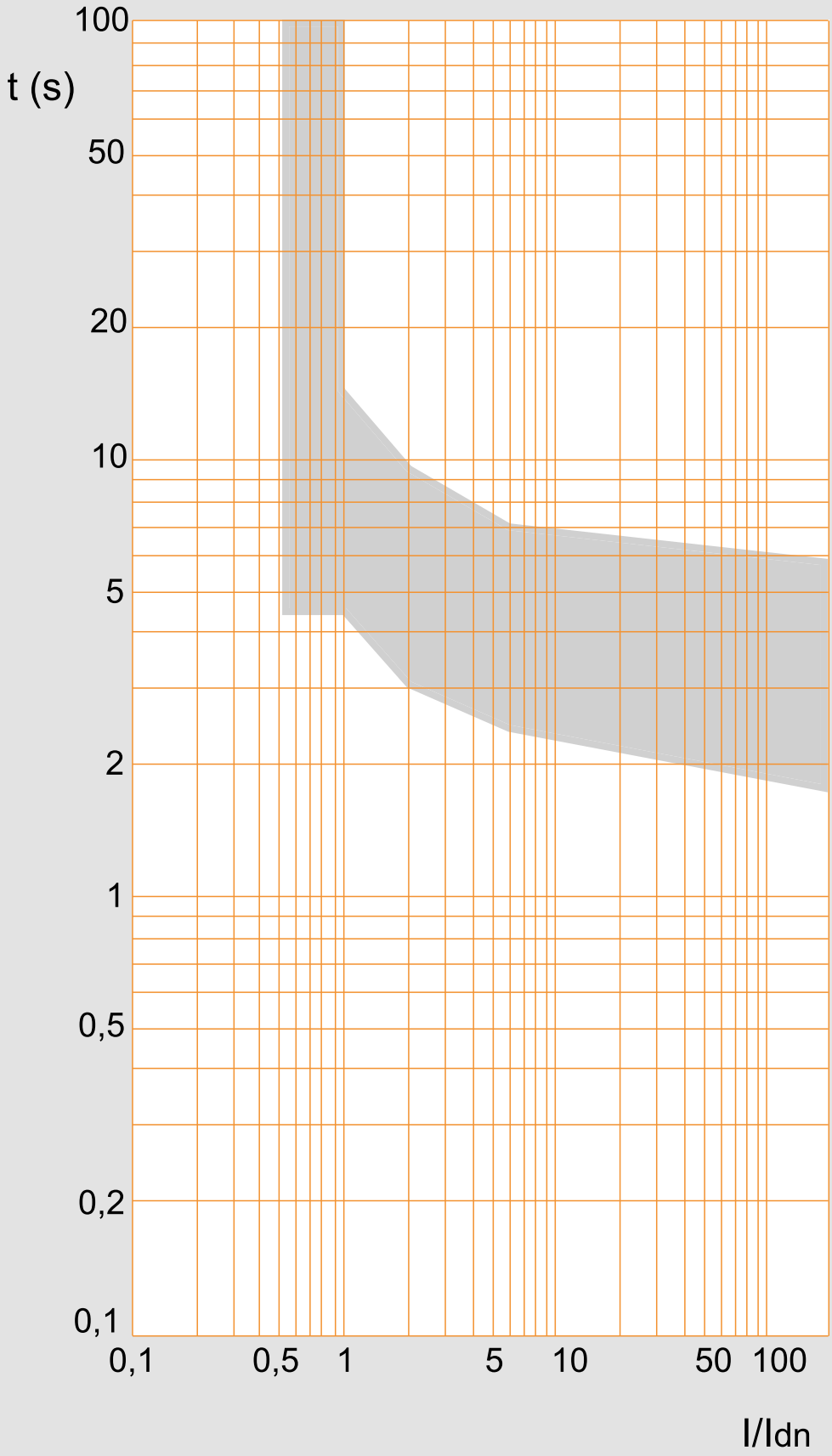
GL/GS400-630

Earth-leakage tripping curve (ADJUSTMENT 1 s)



GL/GS400-630

Earth-leakage tripping curve (ADJUSTMENT 3 s)



NOTES

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