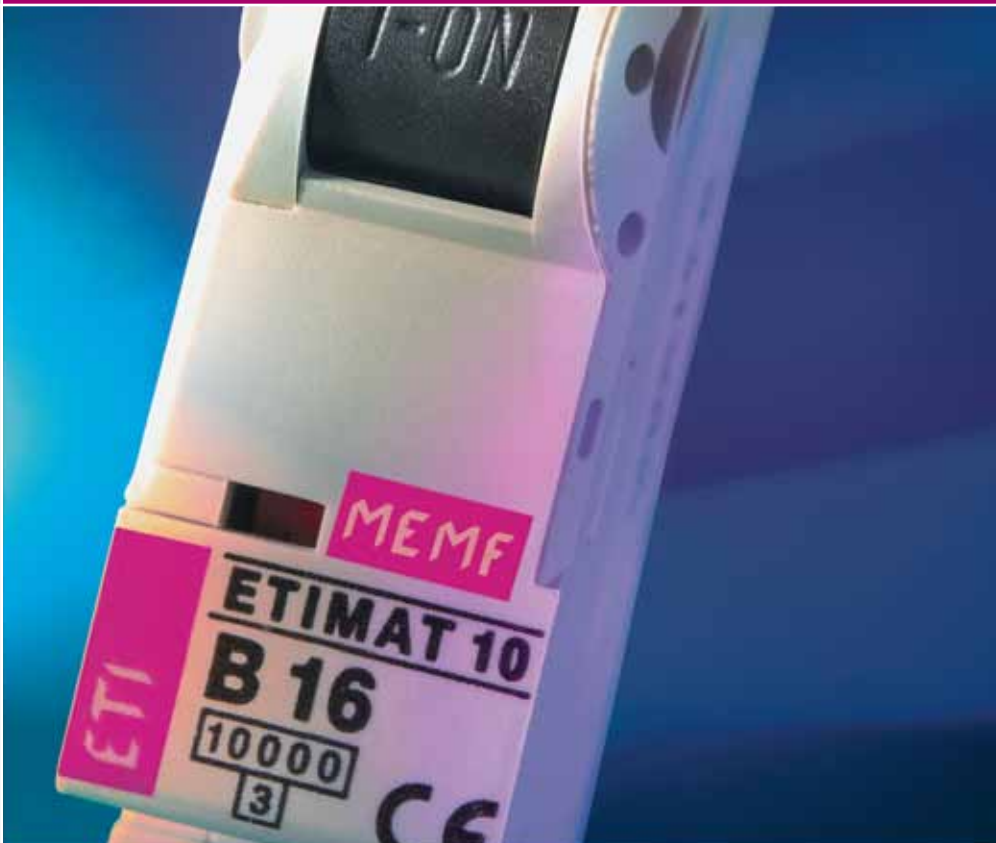




Miniature Circuit Breakers •

Miniature Circuit Breakers and Residual Current Devices



Together to Control the Power

Currently MEMF's manufacturing lines include:

kWh Meters

Circuit Breakers & Protection Devices

LV / MV Instrument Transformers

Panel Indicating Meters (Analog & Digital)

Distribution Boards

And Now Miniature Circuit Breaker

kWh METERS

MEMF started manufacturing kWh meters in February 1999 and has achieved a leadership position within three years.

MEMF manufactured meters are supplied to most of the utility companies in the region and are independently type tested at KEMA Laboratories, Holland

CIRCUIT BREAKERS

MEMF started manufacturing of Moulded Case Circuit Breakers (MCCB's) and has gradually added Adjustable Circuit breakers and Air Circuit Breakers (ACB's) to its range of manufacturing.

The entire range of Circuit Breakers manufactured are independently type tested at ASTA Laboratories, UK & KEMA, Holland.

INSTRUMENT TRANSFORMERS

MEMF started manufacturing of LV Instrument Transformers in 2002. It has subsequently added a state-of-the-art manufacturing facility for MV Instrument Transformers.

The Instrument Transformers being manufactured by MEMF are independently type tested in ASTA Laboratories, Australia.





manufacturing excellence

Middle East Electric Meter Factory Co.

Established since 1997 with a purpose of acquiring the latest technology from around the world and re-engineer it for specific local needs. Our focus in business is in line with the development in the region, its infrastructure, people and economy. Our ultimate goal is to move towards self reliance for various needs in power sector.

Facing the challenges in the industry, MEMF has strategically extended its product & production range. This extension makes MEMF product line be able to meet customer's demands, varied from large project application to common household use.

As a leading and most reputed manufacturer in the electrical industry of Kingdom, MEMF is always dedicated

to provide customers with high quality products and considerate services. As a part of our commitment MEMF has proudly joined hands with European lead manufacturer ETI Elektroelement D.D., Slovenia for manufacturing the Miniature Circuit Breakers (MCB) in the Kingdom. This high quality product has already been certified with world renowned international certificates and achieved a prestige in the world of electrical products.

Where challenges exist, there are chances. MEMF is committed to become a nation wide leader as electrical products manufacturer and is steadily marching towards its mission.

ETI Elektroelement d. d.

Since the year 1950 till now, ETI has grown into a world's leading provider of products and services in the field of electrical installations, and into an important manufacturer of technical ceramic products, tools and equipment, and plastic and technical rubber products.

A substantial element in the company's growth strategy are its subsidiaries in Slovenia and abroad, and close cooperation with selected strategic partners. ETI employs today more than 1600 people, and its products are sold in more than 60 countries all over the world, the company is investing a lot into research & development and innovative activities. It is one of the first Slovenian enterprises which have acquired the quality certificate ISO 9001 and environment management certificate ISO 14001. The quality of products and services is constantly aimed at achieving customer's satisfaction and corresponding business excellence. All our products are internationally certified and have been awarded many quality symbols.

We have succeeded in creating an internationally competitive, development-oriented, and stable business group, whose growth couldn't be stopped neither by extreme pressure of competition nor the last years recession. Our future will continue to be built upon



high-quality offer of complete palette of products and services, on strengthening the flexibility and competitiveness, on mastering new products, while the profit will still be invested into knowledge, market and technological development.

Miniature circuit breakers

Advantages of miniature circuit breakers ETIMAT 6 and 10

→ Sealing possibility



→ Option of mounting auxiliary devices (auxiliary switch, shunt trip, undervoltage release)



→ "ON/OFF" mark on the switch button



→ Indication of contacts' state
→ Marking of circuits possibility



→ Better protection of terminals against touching the parts under voltage



→ Double connection possibility
→ Every product is marked with EAN code



→ New method of mounting on the DIN rail and simple replacement



Miniature circuit breaker ETIMAT 6

Rated short-circuit capacity
6 kARated current
6 - 63 ATripping characteristic
B, C

1-pole

I_n [A]	U_n [V]	code No. B	code No. C	weight [g]	packaging [pcs]
6	230/400	002111512	002141512	112	12/108
10	230/400	002111514	002141514	112	12/108
13	230/400	002111515	002141515	112	12/108
16	230/400	002111516	002141516	112	12/108
20	230/400	002111517	002141517	112	12/108
25	230/400	002111518	002141518	112	12/108
32	230/400	002111519	002141519	112	12/108
40	230/400	002111520	002141520	112	12/108
50	230/400	002111521	002141521	123	12/108
63	230/400	002111522	002141522	123	12/108

1-pole + N

I_n [A]	U_n [V]	code No. B	code No. C	weight [g]	packaging [pcs]
6	230	002112512	002142512	227	6/54
10	230	002112514	002142514	227	6/54
13	230	002112515	002142515	227	6/54
16	230	002112516	002142516	227	6/54
20	230	002112517	002142517	227	6/54
25	230	002112518	002142518	227	6/54
32	230	002112519	002142519	227	6/54
40	230	002112520	002142520	227	6/54
50	230	002112521	002142521	245	6/54
63	230	002112522	002142522	245	6/54

2-pole

I_n [A]	U_n [V]	code No. B	code No. C	weight [g]	packaging [pcs]
6	400	002113512	002143512	227	6/54
10	400	002113514	002143514	227	6/54
13	400	002113515	002143515	227	6/54
16	400	002113516	002143516	227	6/54
20	400	002113517	002143517	227	6/54
25	400	002113518	002143518	227	6/54
32	400	002113519	002143519	227	6/54
40	400	002113520	002143520	227	6/54
50	400	002113521	002143521	245	6/54
63	400	002113522	002143522	245	6/54





3-pole					
I_n [A]	U_n [V]	code No. B	code No. C	weight [g]	packaging [pcs]
6	400	002115512	002145512	345	4/36
10	400	002115514	002145514	345	4/36
13	400	002115515	002145515	345	4/36
16	400	002115516	002145516	345	4/36
20	400	002115517	002145517	345	4/36
25	400	002115518	002145518	345	4/36
32	400	002115519	002145519	345	4/36
40	400	002115520	002145520	345	4/36
50	400	002115521	002145521	372	4/36
63	400	002115522	002145522	372	4/36



3-pole + N					
I_n [A]	U_n [V]	code No. B	code No. C	weight [g]	packaging [pcs]
6	400	002116512	002146512	459	3/27
10	400	002116514	002146514	459	3/27
13	400	002116515	002146515	459	3/27
16	400	002116516	002146516	459	3/27
20	400	002116517	002146517	459	3/27
25	400	002116518	002146518	459	3/27
32	400	002116519	002146519	459	3/27
40	400	002116520	002146520	459	3/27
50	400	002116521	002146521	493	3/27
63	400	002116522	002146522	493	3/27

Miniature circuit breaker MCB 1N

Rated short-circuit capacity
6 kA

Rated current
6 - 32 A

Tripping characteristic
B, C



MCB1+N			
I_n [A]	code No. B	code No. C	packaging [pcs]
6	002191101*	002191121*	1/12
10	002191102*	002191122*	1/12
13	002191103*	002191123*	1/12
16	002191104*	002191124*	1/12
20	002191105*	002191125*	1/12
25	002191106*	002191126*	1/12
32	002191107*	002191127*	1/12

* Available in the second half of the year 2006.

Description
Miniature circuit breaker MCB 1N is a device with protected line pole and switched neutral pole.

Advantages:

- 1-pole+N in single housing
- Sealing possibility
- Indication of contacts' state
- New method of mounting on the DIN rail and simple replacement

Miniature circuit breaker ETIMAT 10

Rated short-circuit capacity
10 kARated current
0,5 - 40 ATripping characteristic
B, C, D

1-pole

I_n [A]	U_n [V]	code No. B	code No. C	code No. D	weight [g]	packaging [pcs]
0,5	230/400		002131701	002151701	115	12/108
1	230/400		002131704	002151704	115	12/108
1,6	230/400		002131707	002151707	115	12/108
2	230/400		002131708	002151708	115	12/108
4	230/400		002131710	002151710	115	12/108
6	230/400	002121712	002131712	002151712	112	12/108
10	230/400	002121714	002131714	002151714	112	12/108
13	230/400	002121715	002131715	002151715	112	12/108
16	230/400	002121716	002131716	002151716	112	12/108
20	230/400	002121717	002131717	002151717	112	12/108
25	230/400	002121718	002131718	002151718	112	12/108
32	230/400	002121719	002131719	002151719	112	12/108
40	230/400	002121720	002131720	002151720	112	12/108

Note: Packaging for all products with characteristic D is 1/12.



1-pole + N

I_n [A]	U_n [V]	code No. B	code No. C	code No. D	weight [g]	packaging [pcs]
0,5	230		002132701	002152701	232	6/54
1	230		002132704	002152704	232	6/54
1,6	230		002132707	002152707	232	6/54
2	230		002132708	002152708	232	6/54
4	230		002132710	002152710	232	6/54
6	230	002122712	002132712	002152712	227	6/54
10	230	002122714	002132714	002152714	227	6/54
13	230	002122715	002132715	002152715	227	6/54
16	230	002122716	002132716	002152716	227	6/54
20	230	002122717	002132717	002152717	227	6/54
25	230	002122718	002132718	002152718	227	6/54
32	230	002122719	002132719	002152719	227	6/54
40	230	002122720	002132720	002152720	227	6/54

Note: Packaging for all products with characteristic D is 1/54.



2-pole

I_n [A]	U_n [V]	code No. B	code No. C	code No. D	weight [g]	packaging [pcs]
0,5	400		002133701	002153701	232	6/54
1	400		002133704	002153704	232	6/54
1,6	400		002133707	002153707	232	6/54
2	400		002133708	002153708	232	6/54
4	400		002133710	002153710	232	6/54
6	400	002123712	002133712	002153712	227	6/54
10	400	002123714	002133714	002153714	227	6/54
13	400	002123715	002133715	002153715	227	6/54
16	400	002123716	002133716	002153716	227	6/54
20	400	002123717	002133717	002153717	227	6/54
25	400	002123718	002133718	002153718	227	6/54
32	400	002123719	002133719	002153719	227	6/54
40	400	002123720	002133720	002153720	227	6/54

Note: Packaging for all products with characteristic D is 1/54.





3-pole						
I_n [A]	U_n [V]	code No. B	code No. C	code No. D	weight [g]	packaging [pcs]
0,5	400		002135701	002155701	354	4/36
1	400		002135704	002155704	354	4/36
1,6	400		002135707	002155707	354	4/36
2	400		002135708	002155708	354	4/36
4	400		002135710	002155710	354	4/36
6	400	002125712	002135712	002155712	345	4/36
10	400	002125714	002135714	002155714	345	4/36
13	400	002125715	002135715	002155715	345	4/36
16	400	002125716	002135716	002155716	345	4/36
20	400	002125717	002135717	002155717	345	4/36
25	400	002125718	002135718	002155718	345	4/36
32	400	002125719	002135719	002155719	345	4/36
40	400	002125720	002135720	002155720	345	4/36

Note: Packaging for all products with characteristic D is 1/36.



3-pole + N						
I_n [A]	U_n [V]	code No. B	code No. C	code No. D	weight [g]	packaging [pcs]
0,5	400		002136701	002156701	469	3/27
1	400		002136704	002156704	469	3/27
1,6	400		002136707	002156707	469	3/27
2	400		002136708	002156708	469	3/27
4	400		002136710	002156710	469	3/27
6	400	002126712	002136712	002156712	459	3/27
10	400	002126714	002136714	002156714	459	3/27
13	400	002126715	002136715	002156715	459	3/27
16	400	002126716	002136716	002156716	459	3/27
20	400	002126717	002136717	002156717	459	3/27
25	400	002126718	002136718	002156718	459	3/27
32	400	002126719	002136719	002156719	459	3/27
40	400	002126720	002136720	002156720	459	3/27

Note: Packaging for all products with characteristic D is 1/27.

Miniature circuit breaker ETIMAT 10

Rated short-circuit capacity
10 kA

Rated current
50, 63 A

Tripping characteristics
B, C

Advantages:

- Tripping characteristic B, C
- High short-circuit capacity
- Option of subsequent mounting of auxiliary switch
- Complies with the main switch requirements.



1-pole				
I_n [A]	code No. B	code No. C	weight [g]	packaging [pcs]
50	002121726	002131726	120	12/108
63	002121727	002131727	120	12/108

2-pole				
I_n [A]	code No. B	code No. C	weight [g]	packaging [pcs]
50	002123726	002133726	240	6/54
60	002123727	002133727	240	6/54

Miniature circuit breakers

3-pole

I_n [A]	code No. B	code No. C	weight [g]	packaging [pcs]
50	002125726	002135726	360	4/36
63	002125727	002135727	360	4/36

3-pole + N

I_n [A]	code No. B	code No. C	weight [g]	packaging [pcs]
50	002126726	002136726	456	3/27
63	002126727	002136727	456	3/27



Miniature circuit breaker ETIMAT 10

Rated short-circuit capacity
15, 20 kA

Rated current
80 - 125 A

Tripping characteristics
C, D

1-pole

I_n [A]	code No. C	code No. D	weight [g]	packaging [pcs]
80	002131731	002151731	231	2/72
100	002131732	002151732	231	2/72
125	002131733		231	2/72

2-pole

I_n [A]	code No. C	code No. D	weight [g]	packaging [pcs]
80	002133731	002153731	466	1/36
100	002133732	002153732	466	1/36
125	002133733		466	1/36

3-pole

I_n [A]	code No. C	code No. D	weight [g]	packaging [pcs]
80	002135731	002155731	696	1/18
100	002135732	002155732	696	1/18
125	002135733		696	1/18

3-pole + N

I_n [A]	code No. C	code No. D	weight [g]	packaging [pcs]
80	002136731	002156731	860	1/18
100	002136732	002156732	860	1/18
125	002136733		860	1/18



Miniature circuit breaker ETIMAT 10 DC

Rated short-circuit capacity
6 kA

Rated current
0,5 - 32 A

Tripping characteristic
B, C

Application - Miniature circuit breakers ETIMAT DC are used for protection of conductors in direct current electric circuits. 1-pole circuit breakers are used for voltages up to 220 V d.c. and for higher voltages (up to 440 V d.c.) 2-pole circuit breakers with poles connected in a series. When connecting the MCB ETIMAT DC man must pay attention to polarity. If connected in a wrong way, the MCB can be destroyed. You cannot use two 1-pole MCBs instead of one 2-pole MCB.



1-pole					
I_n [A]	U_n [V]	code No. B	code No. C	weight [g]	packaging [pcs]
0,5	220		002137701	115	1/12
1	220		002137704	115	1/12
1,6	220		002137707	115	1/12
2	220		002137708	115	1/12
4	220		002137710	115	1/12
6	220	002127712	002137712	119	1/12
10	220	002127714	002137714	119	1/12
13	220	002127715	002137715	119	1/12
16	220	002127716	002137716	119	1/12
20	220	002127717	002137717	119	1/12
25	220	002127718	002137718	119	1/12
32	220	002127719	002137719	119	1/12



2-pole					
I_n [A]	U_n [V]	code No. B	code No. C	weight [g]	packaging [pcs]
0,5	220/440		002138701	232	1/54
1	220/440		002138704	232	1/54
1,6	220/440		002138707	232	1/54
2	220/440		002138708	232	1/54
4	220/440		002138710	232	1/54
6	220/440	002128712	002138712	227	1/54
10	220/440	002128714	002138714	227	1/54
13	220/440	002128715	002138715	227	1/54
16	220/440	002128716	002138716	227	1/54
20	220/440	002128717	002138717	227	1/54
25	220/440	002128718	002138718	227	1/54
32	220/440	002128719	002138719	227	1/54

Accessories for ETIMAT 6 and ETIMAT 10 (0,5 - 40 A)

PSETIMAT is an auxiliary switch used for remote signalling of the MCB to which it is fixed. PSETIMAT may also be fixed later of the state. Clamps are safe to touch. External dimensions comply with MCB, built-in width is 0,5 module (9 mm). During fitting, the MCB must be switched off.

Auxiliary switch PS ETIMAT 10

code No.	contacts	weight [g]	packaging [pcs]
002159031	NO + NC	35	1/12
002159032	1 x NO	30	1/12
002159033	1 x NC	30	1/12

DA ETIMAT shunt trip release is fixed to the right side of the miniature circuit breaker ETIMAT for remote release of the MCB. Dimensions correspond to those of MCB ETIMAT.

Shunt trip release DA ETIMAT 10

	code No.	weight [g]	packaging [pcs]
DA ETIMAT 10 230 V AC	002159301	110	1/54
DA ETIMAT 10 48 V DC	002159311	110	1/54

NA ETIMAT10 undervoltage release is fixed to the right side of the miniature circuit breaker ETIMAT10. Dimensions correspond to those of MCB ETIMAT10.

Undervoltage release NA ETIMAT 10

	code No.	weight [g]	packaging [pcs]
NA ETIMAT10 230 V AC	002159401	110	1/54
NA ETIMAT10 48 V DC	002159411	110	1/54

ETIMAT terminal cover

code No.	weight [g]	packaging [pcs]
002159011	2	12

Sealing piece ETIMAT 10

code No.	weight [g]	packaging [pcs]
002159041	2	12





Marking cover ETIMAT 10

code No.	packaging [pcs]
002159051	12



Locking device BM

code No.	weight [g]
002159062	4

Accessories for ETIMAT 10 (50 - 63 A)



Auxiliary switch PSM 50/63

code No.	weight [g]	packaging [pcs]
002159131	50	1/12

Advantages:

- Possibility of subsequent installation to MCB currents 50 and 63 A
- In accordance with IEC/EN 62019
- Rated current 3 A

Accessories for ETIMAT 10 (80 - 125 A)

Advantages:

- Possibility of subsequent installation to MCB
- ON/OFF signalisation (red/green)
- Wide range of supply (control) voltage



Shunt trip release DA ETIMAT 80/125 110 - 415V

code No. B	weight [g]	packaging [pcs]
002159321	173	1/54

Auxiliary switch PSM 80/125

code No. B	weight [g]	packaging [pcs]
002159121	62	1/12

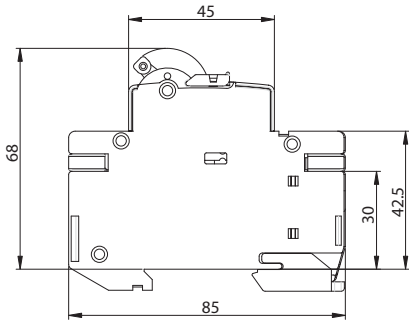
Advantages:

- Possibility of subsequent installation to MCB
- In accordance with EN 60947-5-1

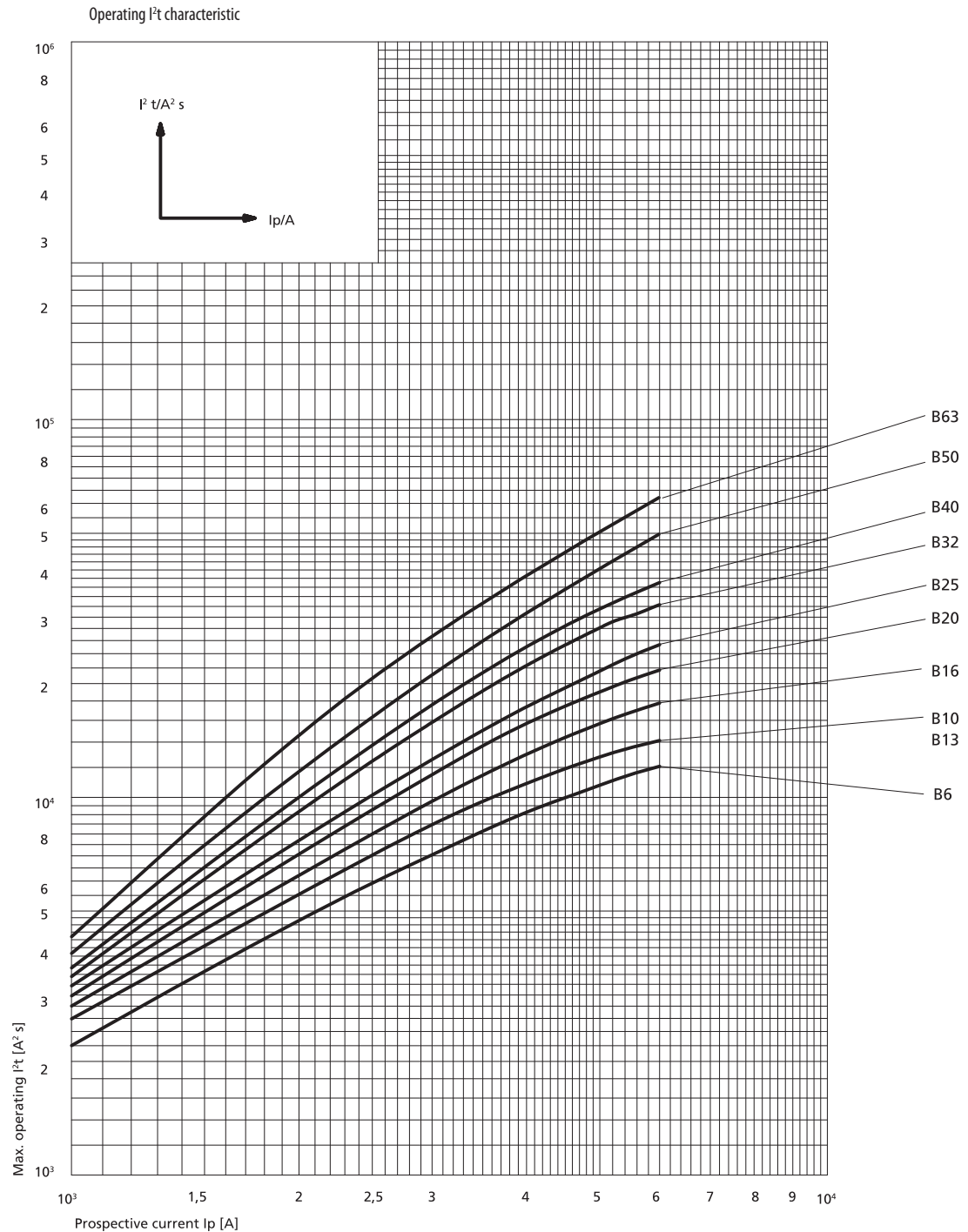
TECHNICAL DATA

Technical data

Miniature circuit breaker ETIMAT 6

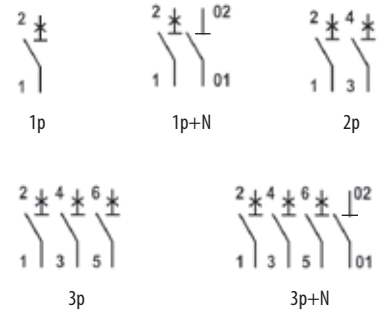


Technical data	
Rated voltage	230/400 Va.c., max. 60 Vd.c.
Rated current	6 – 63 A
Rated frequency	50/60 Hz
Rated short-circuit capacity	6 kA
Energy limiting class	3
Tripping characteristic	B or C
Terminals	1 – 25 mm ² , max. 3 Nm
Build-in width	18 mm/pol
Mounting on the rail	EN 60715 (EN 50022)
Sealing possibility	ON or OFF
Standards	IEC 60898, EN 60898

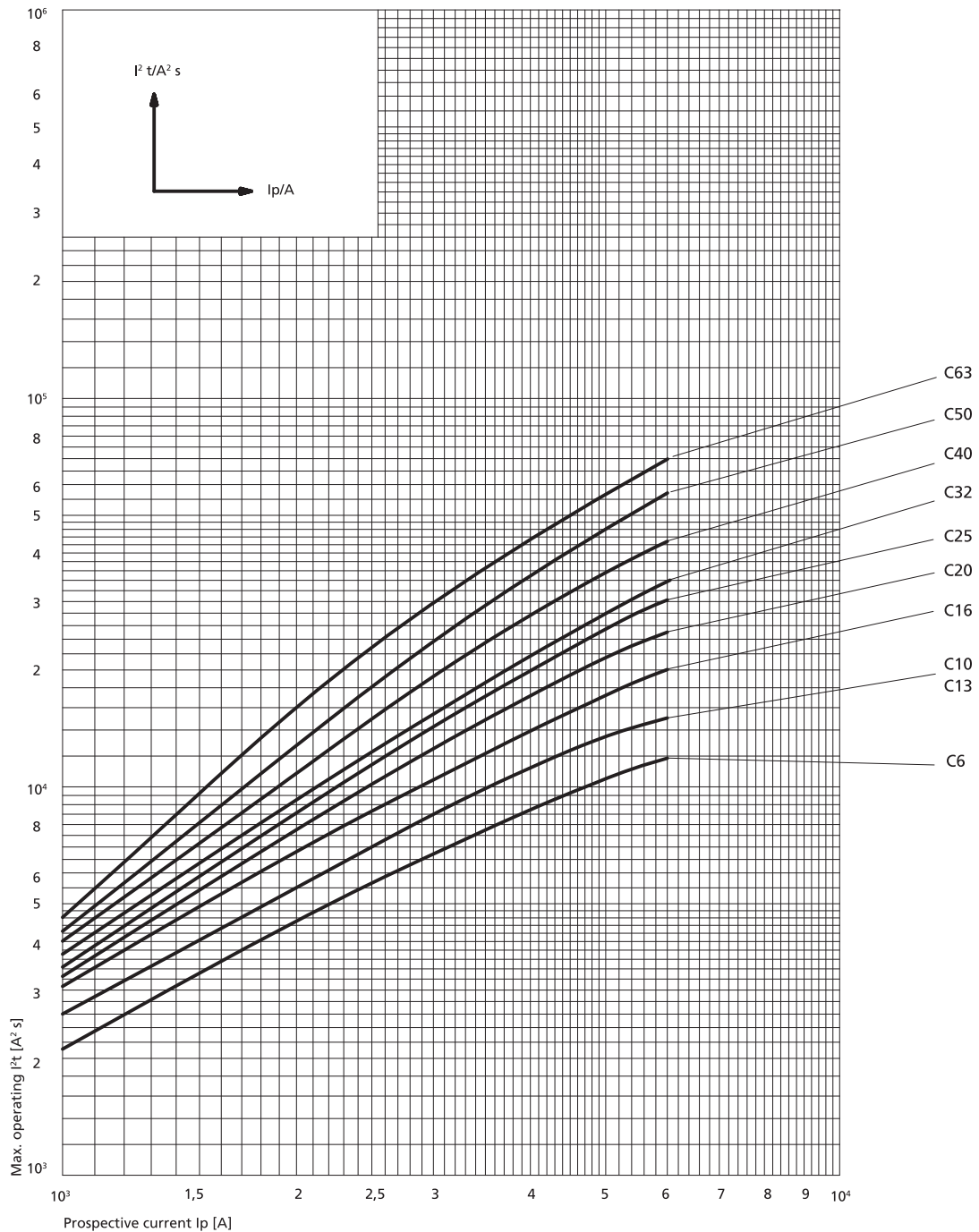


Technical data

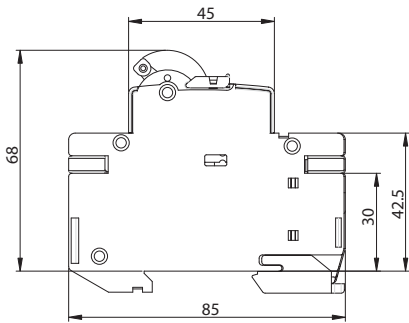
Tripping characteristics			
Characteristic	Test current	Tripping time	Result
B, C	$1,13 I_n$	$t \geq 3600 \text{ s}$	No tripping
B, C	$1,45 I_n$	$t < 3600 \text{ s}$	Tripping
B, C	$2,55 I_n$	$1 \text{ s} < t < 60 \text{ s}$	Tripping
B	$3,00 I_n$	$t \geq 0,1 \text{ s}$	No tripping
C	$5,00 I_n$	$t \geq 0,1 \text{ s}$	No tripping
B	$5,00 I_n$	$t < 0,1 \text{ s}$	Tripping
C	$10,00 I_n$	$t < 0,1 \text{ s}$	Tripping



Operating I^2t characteristic

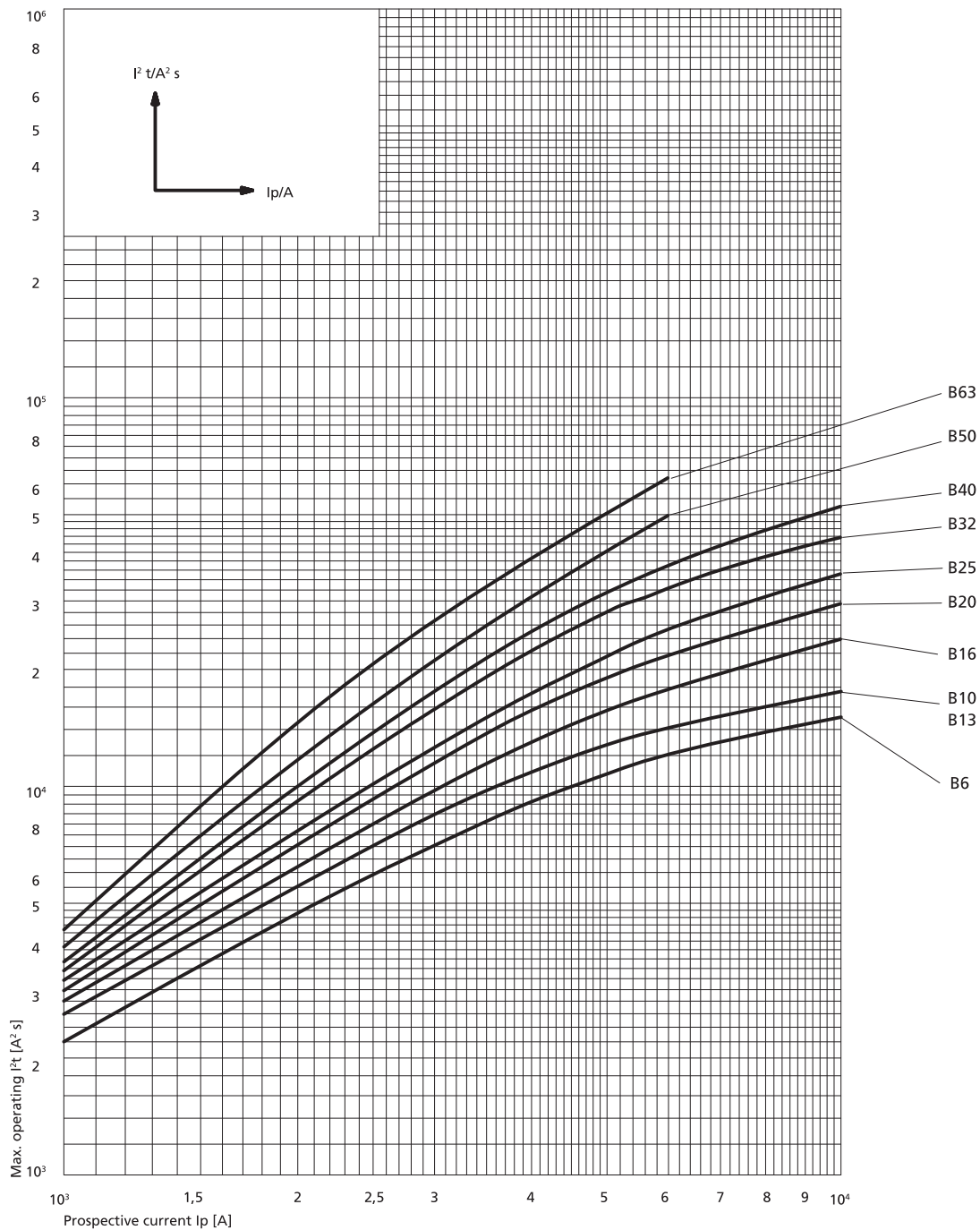


Miniature circuit breaker ETIMAT 10



Technical data	
Rated voltage	230/400 Va.c., max. 60 Vd.c.
Rated current	0,5 – 40 A
Rated frequency	50/60 Hz
Rated short-circuit capacity	0,5 – 40 A: 10 kA (IEC 60898), 15 kA (IEC 60947-2)
Energy limiting class	3
Tripping characteristic	B, C or D
Terminals	1 – 25 mm ² , max. 3 Nm
Build-in width	18 mm/pol
Isolating class	B
Mounting on the rail	EN-60947-2
Sealing possibility	ON or OFF
Standards	IEC 60898, EN 60898, IEC 60947-2

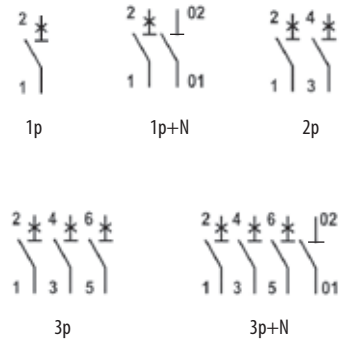
Operating I²t characteristic



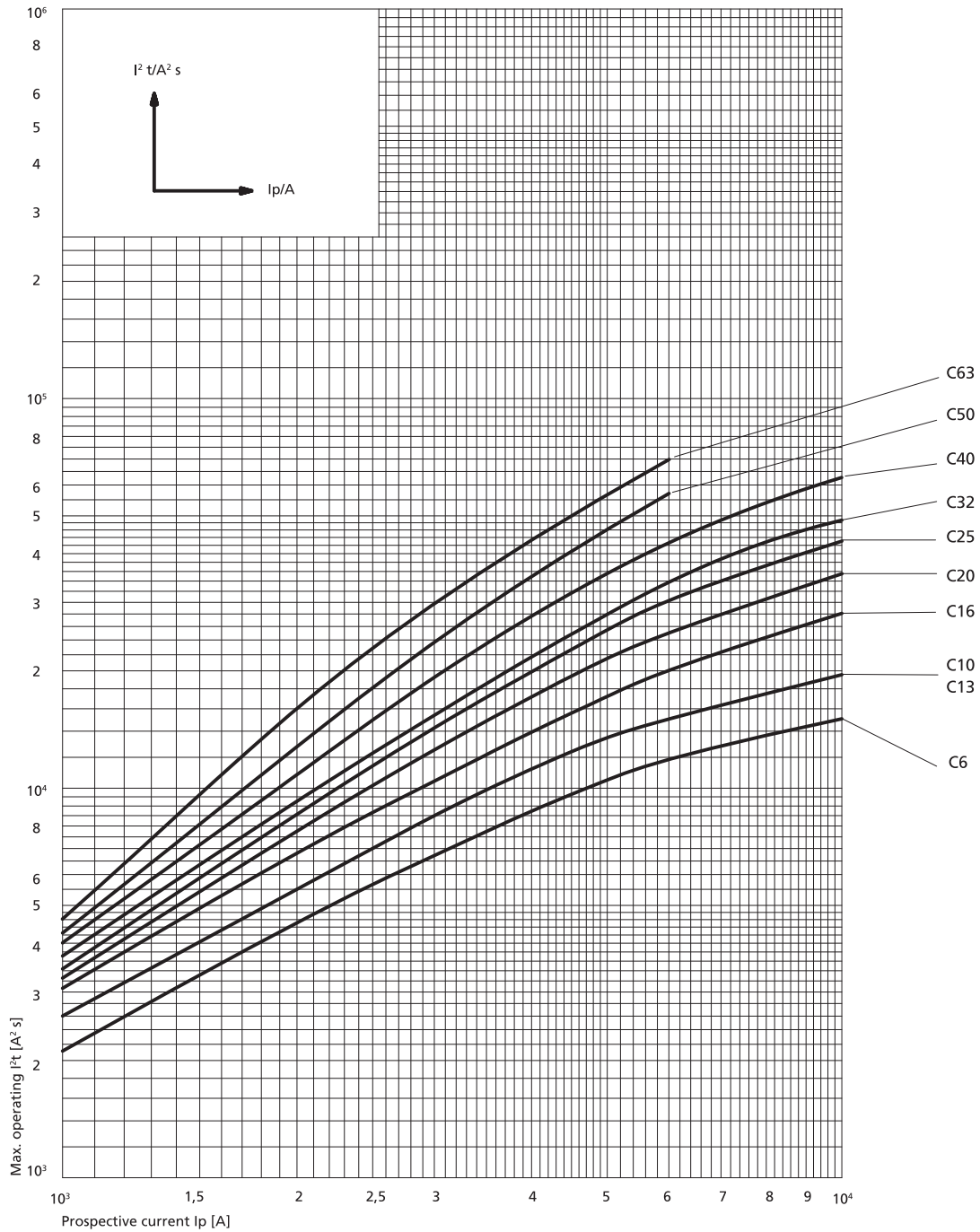
Technical data

Tripping characteristics

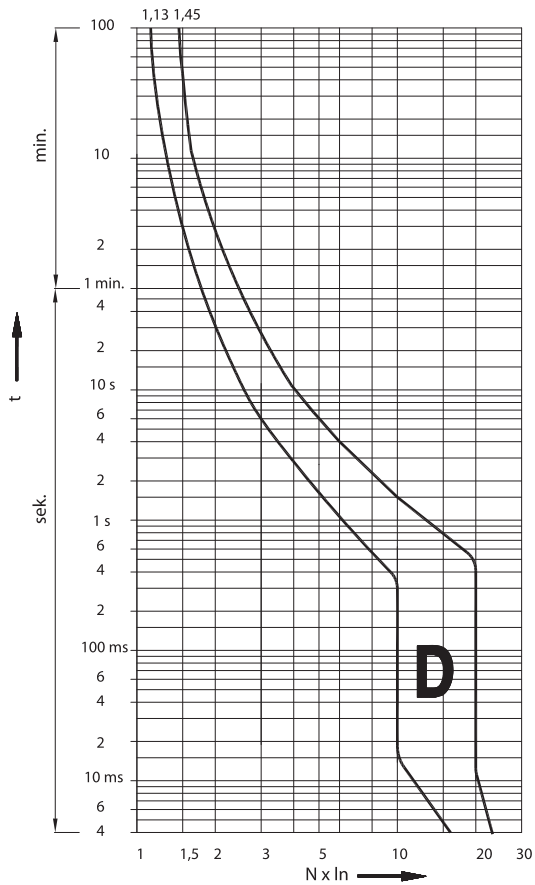
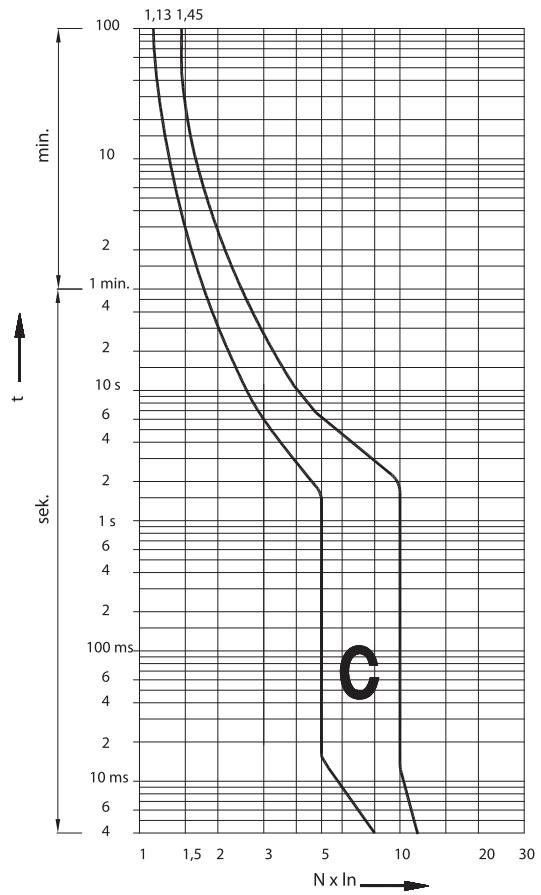
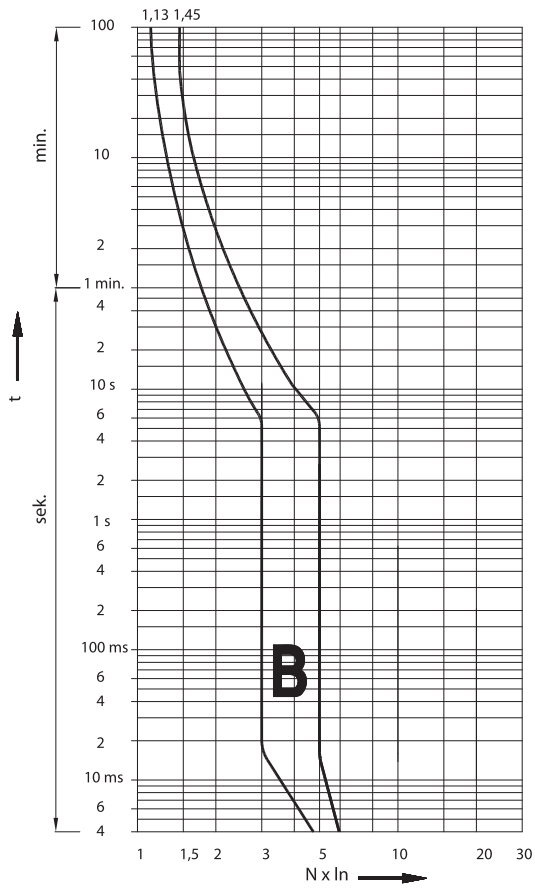
Characteristic	Test current	Tripping time	Result
B, C, D	$1,13 I_n$	$t \geq 3600 \text{ s}$	No tripping
B, C, D	$1,45 I_n$	$t < 3600 \text{ s}$	Tripping
B, C, D	$2,55 I_n$	$1 \text{ s} < t < 60 \text{ s}$	Tripping
B	$3,00 I_n$	$t \geq 0,1 \text{ s}$	No tripping
C	$5,00 I_n$	$t \geq 0,1 \text{ s}$	No tripping
D	$10,00 I_n$	$t \geq 0,1 \text{ s}$	No tripping
B	$5,00 I_n$	$t < 0,1 \text{ s}$	Tripping
C	$10,00 I_n$	$t < 0,1 \text{ s}$	Tripping
D	$20,00 I_n$	$t < 0,1 \text{ s}$	Tripping



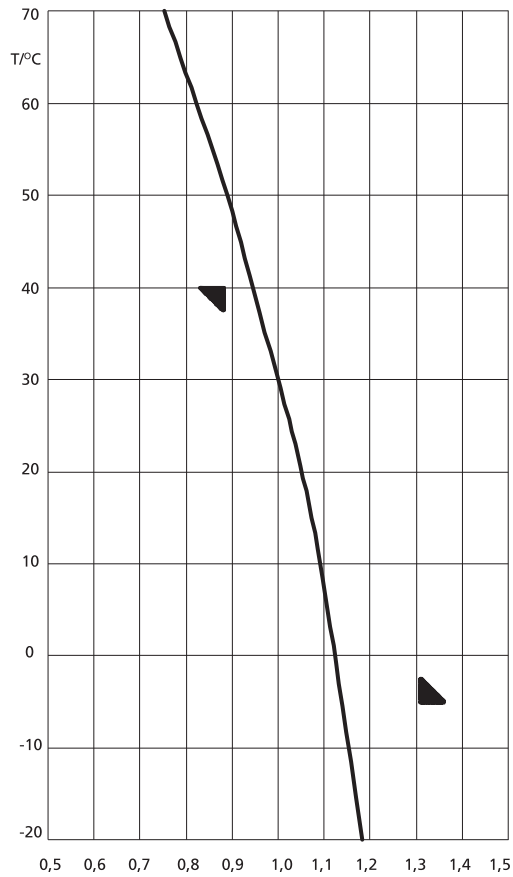
Operating I^2t characteristic



characteristic at 50 and 60Hz



Effect of the ambient temperature on the tripping characteristic



I_n [A]	Ambient temperature $T/^\circ\text{C}$										
	-30	-20	-10	0	10	20	30	40	50	60	
0,5	0,6	0,59	0,57	0,56	0,54	0,52	0,5	0,47	0,44	0,41	
1	1,2	1,18	1,15	1,12	1,09	1,05	1	0,94	0,88	0,82	
1,6	1,92	1,89	1,84	1,79	1,74	1,68	1,6	1,51	1,42	1,32	
2	2,4	2,36	2,30	2,24	2,18	2,1	2	1,88	1,77	1,65	
4	4,8	4,72	4,61	4,49	4,36	4,20	4	3,77	3,55	3,29	
6	7,2	7,09	6,91	6,73	6,54	6,31	6	5,66	5,33	4,94	
10	12	11,8	11,5	11,2	10,9	10,5	10	9,44	8,89	8,23	
13	15,6	15,4	14,9	14,5	14,1	13,6	13	12,2	11,5	10,7	
16	19,2	18,9	18,4	17,9	17,4	16,8	16	15,1	14,2	13,2	
20	24	23,6	23	22,4	21,8	21	21	18,8	17,7	16,5	
25	30	2,5	28,8	28	27,2	26,3	25	23,6	22,2	20,6	
32	38,4	37,8	36,9	35,9	34,9	33,6	32	30,2	28,4	26,3	
40	48	47,8	46,1	44,9	43,6	42	40	37,7	35,5	32,9	
50	60	59,1	57,6	56,1	54,5	52,6	50	47,2	44,4	41,2	
63	75,6	74,4	72,6	70,7	68,7	66,2	63	59,4	56	51,9	

Correction factor is valid for current with times over 30 s

$$k = \frac{I(x^\circ\text{C})}{I(30^\circ\text{C})}$$

$I(x^\circ\text{C})$ - test current at x ambient temperature
 $I(30^\circ\text{C})$ - test current at 30°C ambient temperature

Resistance and power loss

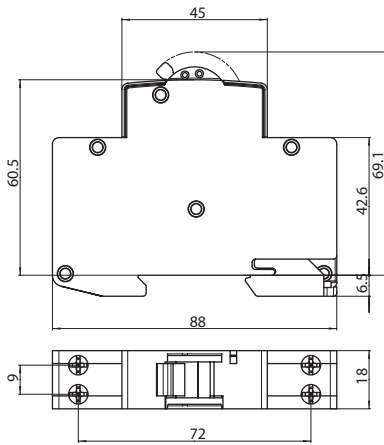
characteristic	I_n [A]	R [mΩ]	P [w]
C, D	0,5	4500	1,12
	1	1800	1,80
	1,6	450	1,15
	2	280	1,08
	4	110	1,70
B, C, D	6	29	1,08
	10	13	1,30
	13	11,6	2,00
	16	9,0	2,30
	20	5,3	2,00
	25	4,1	2,50
	32	2,6	2,70
	40	1,96	3,20
	50	1,5	4,00
	63	1,15	4,80

Selectivity

type	gG NV											
	20	25	32	35	40	50	63	80	100	125	160	
B 6	0,5	0,78	1,2	1,4	1,7	2,4	4,6	7,0	10	10	10	
B 10/13	0,45	0,65	1,1	1,3	1,6	2,2	4,0	6,5	10	10	10	
B 16		0,55	1,0	1,2	1,5	2,0	3,6	5,5	9,5	10	10	
B 20			0,85	1,2	1,5	1,8	3,1	4,6	9,0	10	10	
B 25				1,1	1,4	1,7	2,9	4,0	8,0	10	10	
B 32					1,3	1,6	2,5	3,4	5,5	9,0	10	
B 40						1,5	2,2	3,1	4,9	8,0	10	
B 50							2,1	2,9	4,0	6,2	10	
B 63								2,5	3,3	5,1	8,0	

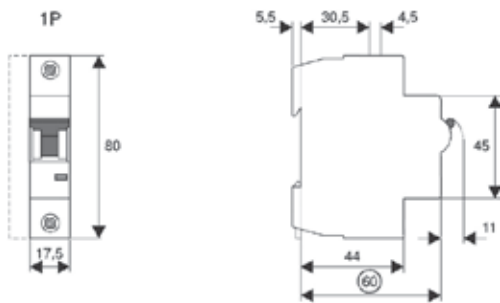
type	gG NV											
	20	25	32	35	40	50	63	80	100	125	160	
C 6	0,52	0,82	1,3	1,5	2,0	2,7	5,1	9,0	10	10	10	
C 10/13	0,47	0,70	1,1	1,4	1,8	2,3	4,0	7,0	10	10	10	
C 16		0,61	0,92	1,2	1,5	1,9	3,2	5,0	9,0	10	10	
C 20			0,90	1,1	1,4	1,7	2,9	4,2	8,0	10	10	
C 25				1,0	1,3	1,6	2,7	3,9	6,0	10	10	
C 32					1,2	1,5	2,3	3,4	5,2	9,0	10	
C 40						1,4	2,1	3,0	4,6	8,0	10	
C 50							2,0	2,7	3,8	7,0	10	
C 63								2,3	3,2	5,5	9,0	

Miniature circuit breaker MCB1+N

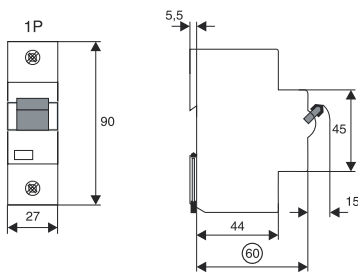


Technical data	
Rated voltage U_n	230 Va.c.
Rated current I_n	6-32 A
Rated frequency f_n	50Hz
Rated short-circuit capacity	6.000 A
Tripping characteristics	B, C
Terminals	1-10mm ²
Build-in width	18mm
Standard	IEC 60898, EN 60898

Miniature circuit breaker ETIMAT 10 50-63 A, 80-125 A

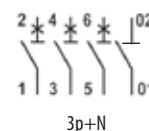
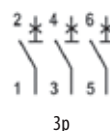
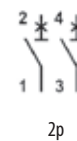


ETIMAT 10, 50-63 A



ETIMAT 10, 80-125 A,

Technical data		
Rated voltage	50-63 A	230/400V a.c., 48V d.c.
	80-125 A	230/400V a.c., 60V d.c.
Rated current	50, 63, 80, 100, 125 A	
Tripping characteristics	B, C, D	
Rated frequency	50/60 Hz	
Rated insulation voltage	440V a.c. (80-125A)	
Rated impuls withstand voltage U_{imp}	4kV (80-125A)	
Rated short-circuit capacity:	Characteristic B	$I_n=50, 63$ A 10kA (EN 60898)
	Characteristic C	$I_n=50, 63$ A 10kA (EN 60898)
	Characteristic C	$I_n=80, 100$ A 20kA (EN 60947-2)
		$I_n=125$ A 15kA (EN 60947-2)
	Characteristic D	$I_n=80$ A 20kA (EN 60947-2)
	$I_n=100$ A 15kA (EN 60947-2)	
Energy limiting class	3	
Terminals	50-63 A	1-25mm ²
	80-125 A	2,5-50mm ²
Build-in width	50-63 A	17,5 mm/pole
	80-125 A	27mm/pole
Mounting on the rail	EN 60715 (EN 50022)	
Mechanical durability	50-63 A	min. 8000 cycles
	80-125 A	min. 20000 cycles
Sealing possibility	ON or OFF	
Standards	EN 60898, EN 60947-2	



Miniature circuit breaker ETIMAT 10 DC

Technical data

Rated voltage - for 1-pole U_n - for 2-pole U_n	220 Vd.c. 220 V / 440 Vd.c.
Rated time constant L/R	4 ms
Rated current I_N	0,5 - 32 A
Rated short-circuit capacity	6.000 A
Tripping characteristic	B, C
Energy limiting class	3
Isolating class	B
Back-up fuse	100 A gG
Terminals	1-25mm ² , max. 3Nm
Standards	IEC 60898, EN 60898, DIN VDE 0641



Connecting diagrams in direct current electric circuits

Rated voltage of circuit breaker	220 V ---	220/440 V ---	220/440 V ---	220/440 V ---
Voltage between conductors-max.	220 V ---	440 V ---	440 V ---	440 V ---
Voltage between conductor and earth-max.	220 V ---	220 V ---	440 V ---	220 V ---
Circuit breaker	1-pole	2-pole	2-pole	2-pole
Connecting diagram				

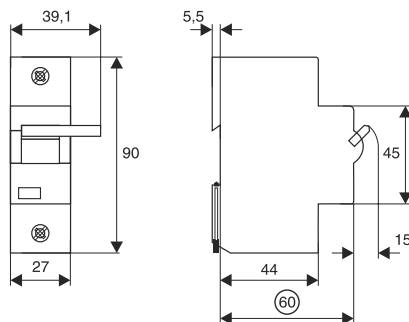
Auxiliary switch PSETIMAT 10

Technical data

Rated current	6 A (230 V a.c.), 1 A (110 V d.c.)
Terminal	1-4mm ²
Contact	1 xb-contact (NC) 1 xa-contact (NO)
Conditional short-circuit current	1 kA with fuse-link 20 A

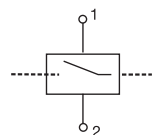
PS ETIMAT 10 is an auxiliary switch for ETIMAT 10 0,5-40 A

Shunt trip release DA ETIMAT 80/125 110-415V



Technical data

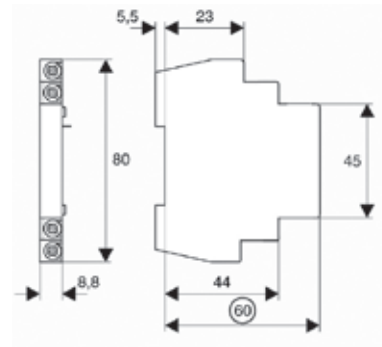
Nominal voltage	110 - 415 V a.c.
Rated frequency	50/60Hz
Max. inrush current	3,6 A
Build-in width	27mm/pole
Mounting on the rail	EN 60715 (EN 50022)



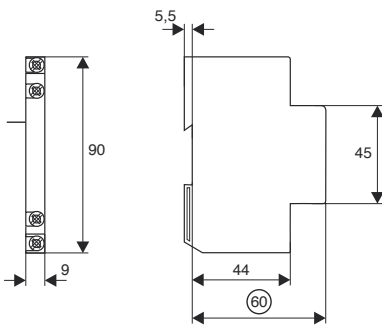
Auxiliary switch PSM 50/63



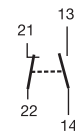
Technical data	
Rated current	3A / AC13 (250V a.c.)
Rated thermic current I _{th}	4A
Max. back-up fuse	4A
Contacts	1x a-contact, 1x b-contact
Utilization category AC-13	3A /250V a.c.
Utilization category AC-15	2A/250 V a.c.
Utilization category DC-12	0,5A/110V d.c.
Build-in width	8,8mm/pole
Mounting on the rail	EN 50022
Terminals	0,5-2,5mm ²
Standard	EN 60947-5-1, EN 62019



Auxiliary switch PSM 80/125



Technical data	
Rated current	6 A / AC13 (250 V a.c.)
Rated thermic current I _{th}	8 A
Rated insulation voltage	440 V a.c.
Max. back-up fuse	6A gL
Contacts	1x a-contact, 1x b-contact
Utilization category AC-13	6 A/250 V a.c. 2 A/440 V a.c.
Utilization category DC-13	4 A/600 V d.c. 2 A/110 V d.c. 0,5 A/230 V d.c.
Build-in width	9 mm/pole
Mounting on the rail	EN 60715 (EN 50022)
Terminals	1x1mm ² up to 2x2,5mm ²
Standard	EN 60947-5-1





MIDDLE EAST ELECTRIC METER FACTORY CO.

New Industrial Area, Stage III,
P.O. Box 355989 Riyadh 11383
Kingdom of Saudi Arabia

Head Office:

Tel.: 00 966 1 496 6667

Fax : 00 966 1 491 7919

Factory:

Tel.: 00 966 1 265 0515

Fax : 00 966 1 265 0360

E-mail : sales@memf.com.sa

Website : www.memf.com.sa