MCBs - Miniature circuit breakers ETIMAT

Advantages of miniature circuit breakers ETIMAT 6

→ Sealing possibility

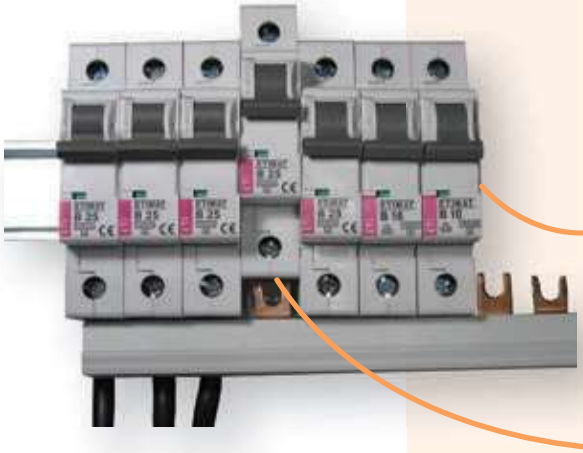
→ ON/OFF mark on the switch button

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

→ 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 kA**

Rated current **0,5 - 63 A**

Tripping 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	/	002141501	002161501	115	12/108
1	230/400	002111509	002141504	002161504	115	12/108
1,6	230/400	/	002141507	002161507	115	12/108
2	230/400	002111510	002141508	002161508	115	12/108
3	230/400	/	002141509	/	115	12/108
4	230/400	002111511	002141510	002161510	115	12/108
6	230/400	002111512	002141512	002161512	112	12/108
10	230/400	002111514	002141514	002161514	112	12/108
13	230/400	002111515	002141515	002161515	112	12/108
16	230/400	002111516	002141516	002161516	112	12/108
20	230/400	002111517	002141517	002161517	112	12/108
25	230/400	002111518	002141518	002161518	112	12/108
32	230/400	002111519	002141519	002161519	112	12/108
40	230/400	002111520	002141520	002161520	112	12/108
50	230/400	002111521	002141521	002161521	123	12/108
63	230/400	002111522	002141522	002161522	123	12/108

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	/	002142501	002162501	232	6/54
1	230	002112509	002142504	002162504	232	6/54
1,6	230	/	002142507	002162507	232	6/54
2	230	002112510	002142508	002162508	232	6/54
3	230	/	002142509	/	232	6/54
4	230	002112511	002142510	002162510	232	6/54
6	230	002112512	002142512	002162512	227	6/54
10	230	002112514	002142514	002162514	227	6/54
13	230	002112515	002142515	002162515	227	6/54
16	230	002112516	002142516	002162516	227	6/54
20	230	002112517	002142517	002162517	227	6/54
25	230	002112518	002142518	002162518	227	6/54
32	230	002112519	002142519	002162519	227	6/54
40	230	002112520	002142520	002162520	227	6/54
50	230	002112521	002142521	002162521	245	6/54
63	230	002112522	002142522	002162522	245	6/54

2-pole

I_n [A]	U_n [V]	Code No. B	Code No. C	Code No. D	Weight [g]	Packaging [pcs]
0,5	400	/	002143501	002163501	232	6/54
1	400	002113509	002143504	002163504	232	6/54
1,6	400	/	002143507	002163507	232	6/54
2	400	002113510	002143508	002163508	232	6/54
3	400	/	002143509	/	232	6/54
4	400	002113511	002143510	002163510	232	6/54
6	400	002113512	002143512	002163512	227	6/54
10	400	002113514	002143514	002163514	227	6/54
13	400	002113515	002143515	002163515	227	6/54
16	400	002113516	002143516	002163516	227	6/54
20	400	002113517	002143517	002163517	227	6/54
25	400	002113518	002143518	002163518	227	6/54
32	400	002113519	002143519	002163519	227	6/54
40	400	002113520	002143520	002163520	227	6/54
50	400	002113521	002143521	002163521	245	6/54
63	400	002113522	002143522	002163522	245	6/54

Technical data on page 46

3-pole

I_n [A]	U_n [V]	Code No. B	Code No. C	Code No. D	Weight [g]	Packaging [pcs]
0,5	400	/	002145501	002164501	354	4/36
1	400	002115509	002145504	002164504	354	4/36
1,6	400	/	002145507	002164507	354	4/36
2	400	002115510	002145508	002164508	354	4/36
3	400	/	002145509	/	354	4/36
4	400	002115511	002145510	002164510	354	4/36
6	400	002115512	002145512	002164512	345	4/36
10	400	002115514	002145514	002164514	345	4/36
13	400	002115515	002145515	002164515	345	4/36
16	400	002115516	002145516	002164516	345	4/36
20	400	002115517	002145517	002164517	345	4/36
25	400	002115518	002145518	002164518	345	4/36
32	400	002115519	002145519	002164519	345	4/36
40	400	002115520	002145520	002164520	345	4/36
50	400	002115521	002145521	002164521	372	4/36
63	400	002115522	002145522	002164522	372	4/36

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	/	002146501	002165501	469	3/27
1	400	002116509	002146504	002165504	469	3/27
1,6	400	/	002146507	002165507	469	3/27
2	400	002116510	002146508	002165508	469	3/27
3	400	/	002146509	/	469	3/27
4	400	002116511	002146510	002165510	469	3/27
6	400	002116512	002146512	002165512	459	3/27
10	400	002116514	002146514	002165514	459	3/27
13	400	002116515	002146515	002165515	459	3/27
16	400	002116516	002146516	002165516	459	3/27
20	400	002116517	002146517	002165517	459	3/27
25	400	002116518	002146518	002165518	459	3/27
32	400	002116519	002146519	002165519	459	3/27
40	400	002116520	002146520	002165520	459	3/27
50	400	002116521	002146521	002165521	493	3/27
63	400	002116522	002146522	002165522	493	3/27

The circuit breakers type ETIMAT P6 / 3-pole + N are suitable for use as 4-pole circuit breakers

Miniature circuit breaker ETIMAT 1N

Rated short-circuit capacity	Rated current	Tripping characteristic
6 kA	**6 - 32 A**	**B, C**

ETIMAT 1N			
I_n [A]	Code No. B	Code No. C	Packaging [pcs]
6	002191101	002191121	12/108
10	002191102	002191122	12/108
13	002191103	002191123	12/108
16	002191104	002191124	12/108
20	002191105	002191125	12/108
25	002191106	002191126	12/108
32	002191107	002191127	12/108

Description
Miniature circuit breaker ETIMAT 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

Accessories for ETIMAT 6

PS ETIMAT is an auxiliary switch used for remote signalling of the MCB to which it is fixed. PS ETIMAT 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				
Code No.	Type	contacts	Weight [g]	Packaging [pcs]
002159031	PS ETIMAT 10 - MD	NO + NC	35	1/12
002159032	PS ETIMAT 10 - M	1 x NC	30	1/12
002159033	PS ETIMAT 10 - D	1 x NO	30	1/12

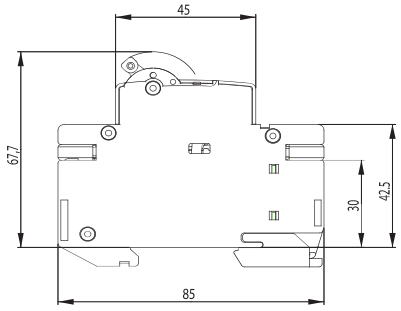
DA ETIMAT shunt trip release is fixed to the right side of the miniature circuit breaker ETIMAT for remote release of the MCB. Dimensions correspond to those of MCB ETIMAT.

Shunt trip release DA ETIMAT			
	Code No.	Weight [g]	Packaging [pcs]
DA ETIMAT 10 230 V AC/DC	002159301	110	1/54
DA ETIMAT 10 48 V AC/DC	002159311	110	1/54
DA ETIMAT 10 24V AC/DC	002159312	110	1/54

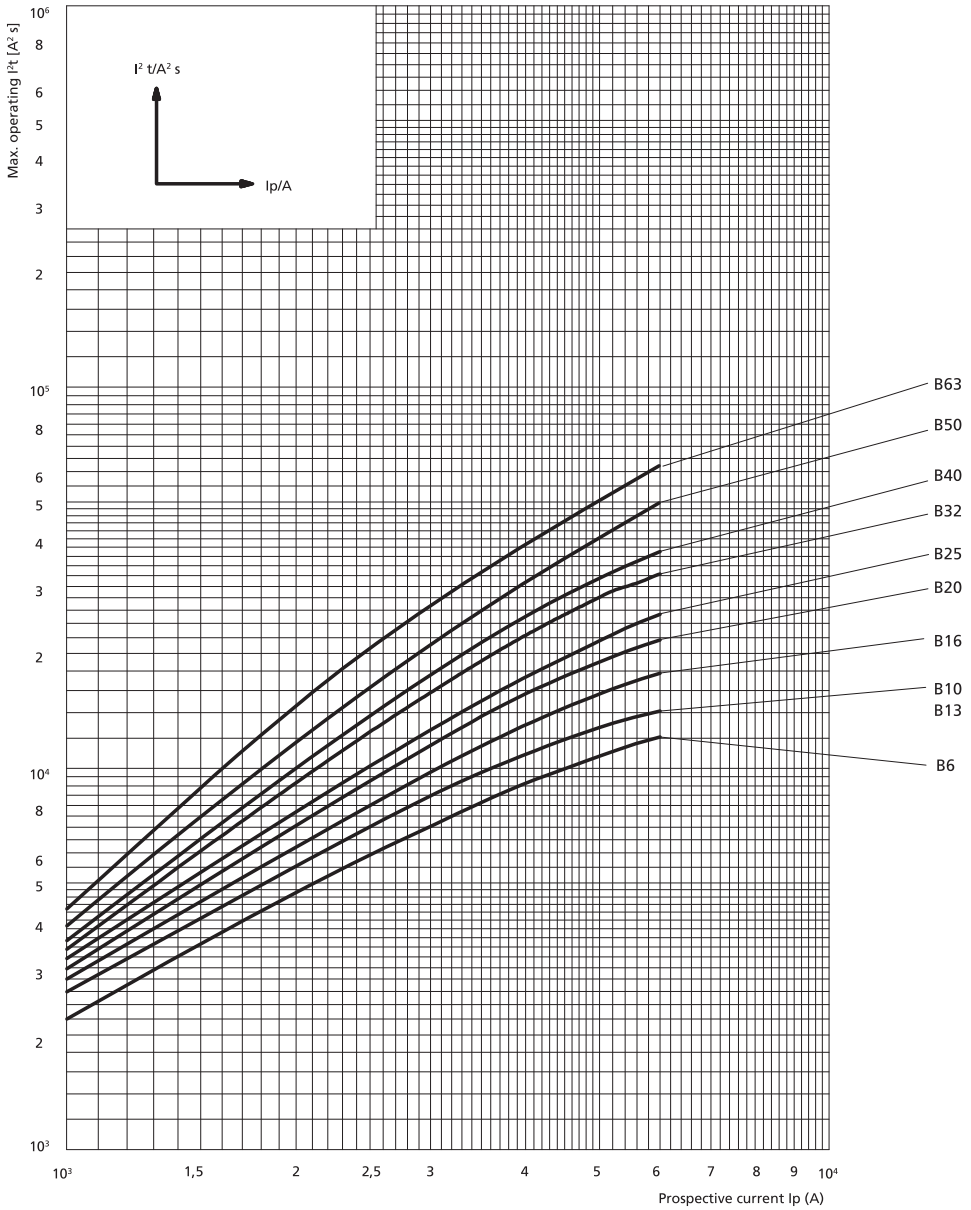
Sealing piece ETIMAT		
Code No.	Weight [g]	Packaging [pcs]
002159041	2	12

Marking cover ETIMAT	
Code No.	Packaging [pcs]
002159051	12

Miniature circuit breaker ETIMAT 6

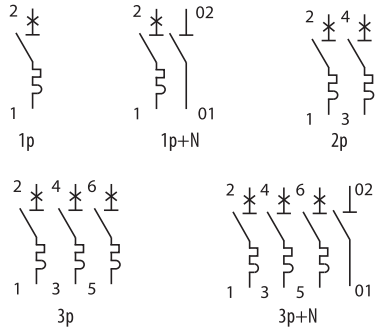


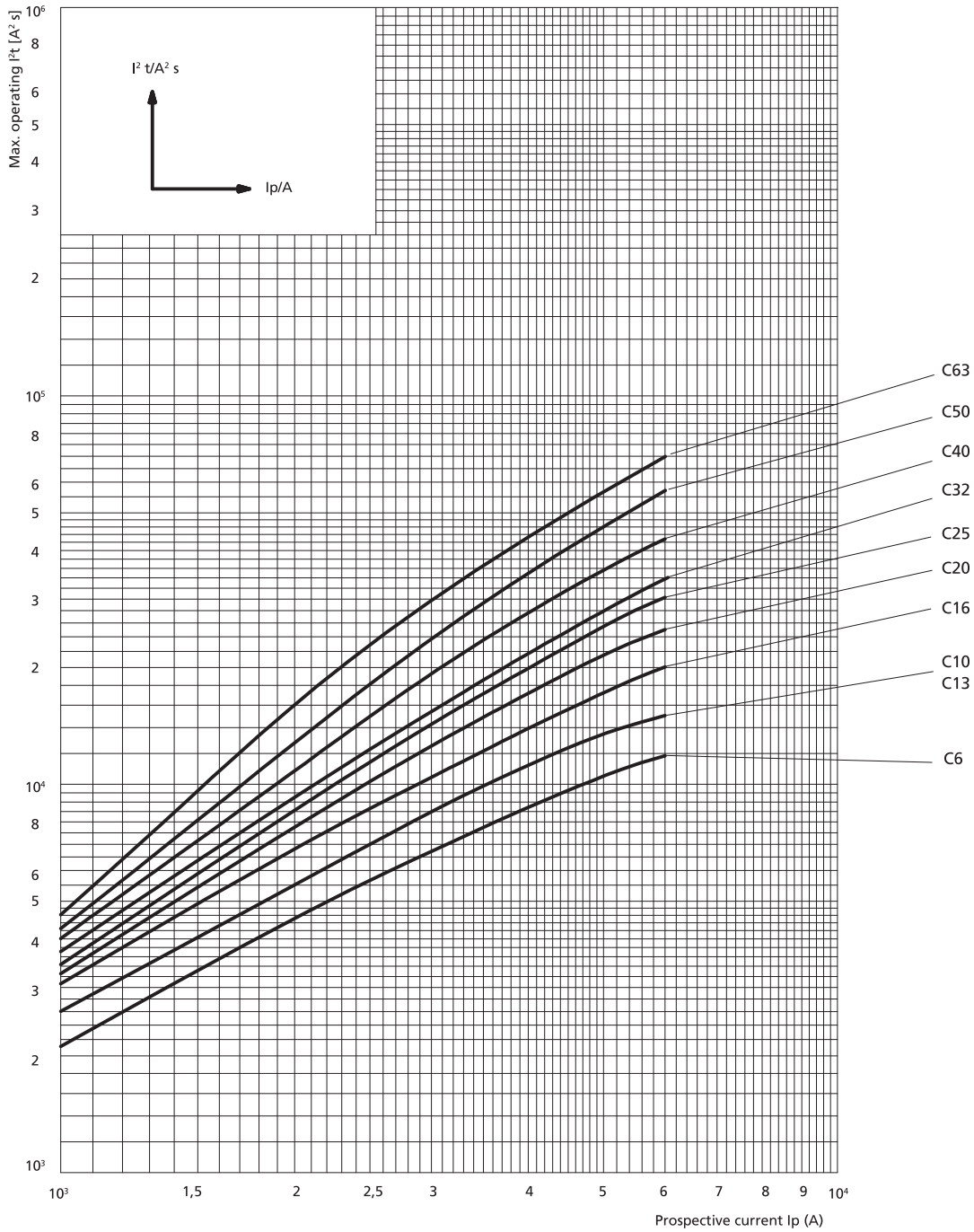
Technical data	
Rated voltage	230/400 V AC, max. 60 V DC / pole
Rated current	B:1-63A, C:0.5-63A, D:0.5-63A
Rated frequency	50/60 Hz
Rated short-circuit capacity	6 kA
Back-up fuse	100A gG
Energy limiting class	3; B, C
Tripping characteristic	B, C, D
Terminals	1 – 25 mm^2, max. 3 Nm
Terminal screw	M5 (Pozidrive PZ2)
Build-in width	18 mm/pol
Mounting on the rail	EN 60715 (EN 50022)
Busbar Thickness	0,8-2mm
Mounting position	any
Sealing possibility	ON / OFF
Electrical endurance (ops)	8.000
Mechanical endurance (ops)	20.000
Overvoltage category	III
Resistance to vibrations acc. to IEC 60068-2-7	5g (10,60 & 500Hz)
Standards	IEC 60898, EN 60898, IEC 60947-2



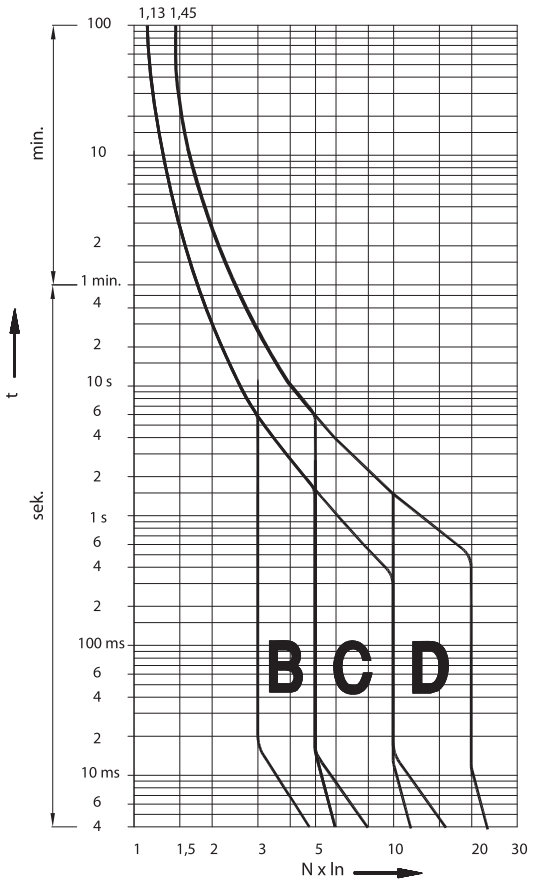
Tripping characteristics

Characteristic	Test current	Tripping time	Result
B, C, D	1,13 I_n	t ≥ 3600 s	No tripping
B, C, D	1,45 I_n	t < 3600 s	Tripping
B, C, D	2,55 I_n	1s < t < 60 s	Tripping
B	3,00 I_n	t ≤ 0,1 s	No tripping
C	5,00 I_n	t ≤ 0,1 s	No tripping
D	10,00 I_n	t ≤ 0,1 s	No tripping
B	5,00 I_n	t < 0,1 s	Tripping
C	10,00 I_n	t < 0,1 s	Tripping
D	20,00 I_n	t < 0,1 s	Tripping





I/t characteristic at 50 and 60Hz



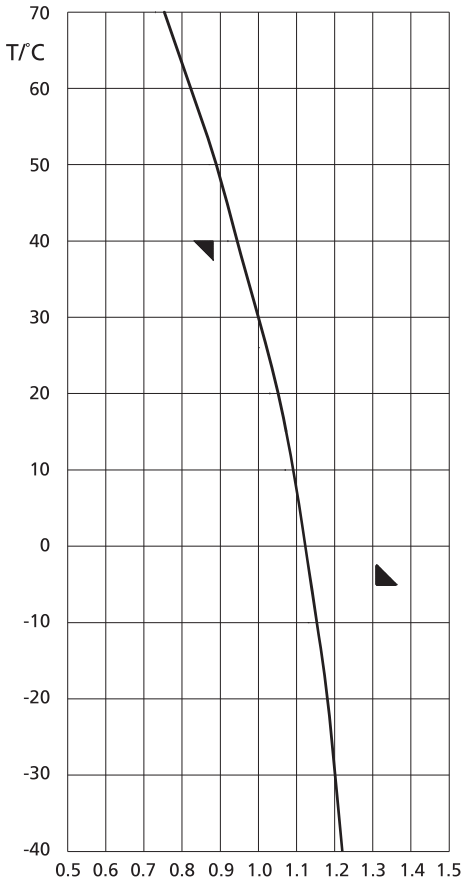
Conductor cross-section [mm²]	Number of single conductors, rigid, single-wire CU conductor				
	1	2	3	4	5
1,5	✓	✓	✓	✓	×
2,5	✓	✓	✓	×	×
4	✓	✓	✓	×	×
6	✓	✓	×	×	×
10	✓	✓	×	×	×
16	✓	×	×	×	×
25	✓	×	×	×	×

Remark: When you use more than 2 cables you have to be careful how those cables are inserted, due to insure proper presure on each cable

Conductor cross-section [mm²]	Number of single conductors, flexible Cu conductors without cable ferrule					
	1	2	3	4	5	6
1,5	✓	✓	✓	✓	✓	✓
2,5	✓	✓	✓	✓	✓	✓
4	✓	✓	✓	✓	✓	✓
6	✓	✓	✓	×	×	×
10	✓	✓	×	×	×	×
16	✓	×	×	×	×	×
25	✓	×	×	×	×	×

Combination of rigid single-wire and flexible multi-wire Cu conductors is not allowed

Effect of the ambient temperature on the tripping characteristic



I_n [A]	Ambient temperature T/°C											
	-40	-30	-20	-10	0	10	20	30	40	50	60	70
0,5	0,61	0,6	0,59	0,57	0,56	0,54	0,52	0,5	0,47	0,44	0,41	0,38
1	1,22	1,2	1,18	1,15	1,12	1,09	1,05	1	0,94	0,88	0,82	0,75
1,6	1,95	1,92	1,89	1,84	1,79	1,74	1,68	1,6	1,51	1,42	1,32	1,2
2	2,44	2,4	2,36	2,30	2,24	2,18	2,1	2	1,88	1,77	1,65	1,5
4	4,88	4,8	4,72	4,61	4,49	4,36	4,20	4	3,77	3,55	3,29	3
6	7,32	7,2	7,09	6,91	6,73	6,54	6,31	6	5,66	5,33	4,94	4,5
10	12,2	12	11,8	11,5	11,2	10,9	10,5	10	9,44	8,89	8,23	7,5
13	15,9	15,6	15,4	14,9	14,5	14,1	13,6	13	12,2	11,5	10,7	9,75
16	19,5	19,2	18,9	18,4	17,9	17,4	16,8	16	15,1	14,2	13,2	12
20	24,4	24	23,6	23	22,4	21,8	21	21	18,8	17,7	16,5	15
25	30,5	30	2,5	28,8	28	27,2	26,3	25	23,6	22,2	20,6	18,8
32	39	38,4	37,8	36,9	35,9	34,9	33,6	32	30,2	28,4	26,3	24
40	48,8	48	47,8	46,1	44,9	43,6	42	40	37,7	35,5	32,9	30
50	61	60	59,1	57,6	56,1	54,5	52,6	50	47,2	44,4	41,2	37,5
63	76,9	75,6	74,4	72,6	70,7	68,7	66,2	63	59,4	56	51,9	47,3

Correction factor is valid for current with times over 30 s
I(x°C) - test current at x ambient temperature
I(30°C) - test current at 30°C ambient temperature

$$k = \frac{I(x°C)}{I(30°C)}$$

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

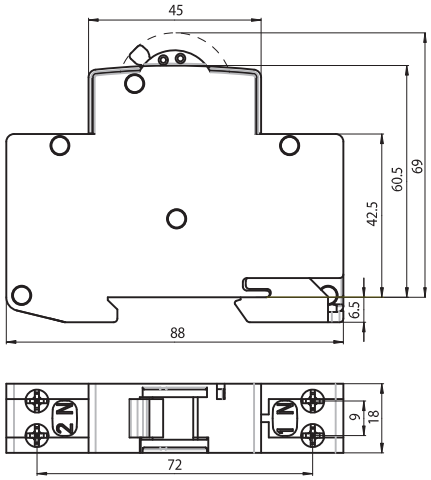
Selectivity

ETIMAT	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	6,0	6,0	6,0	6,0
B 10/13	0,45	0,65	1,1	1,3	1,6	2,2	4,0	6,0	6,0	6,0	6,0
B 16		0,55	1,0	1,2	1,5	2,0	3,6	5,5	6,0	6,0	6,0
B 20			0,85	1,2	1,5	1,8	3,1	4,6	6,0	6,0	6,0
B 25				1,1	1,4	1,7	2,9	4,0	6,0	6,0	6,0
B 32					1,3	1,6	2,5	3,4	5,5	6,0	6,0
B 40						1,5	2,2	3,1	4,9	6,0	6,0
B 50							2,1	2,9	4,0	6,0	6,0
B 63								2,5	3,3	5,1	6,0

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

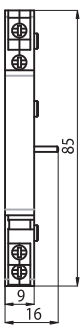
Miniature circuit breaker ETIMAT 1N

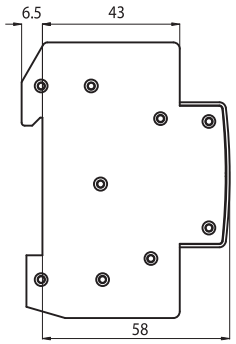
Technical data	
Rated voltage U_n	230 V AC
Rated current I_n	6-32 A
Rated frequency f_n	50/60Hz
Rated short-circuit capacity	6.000 A
Back-up fuse	100 A gG
Tripping characteristics	B, C
Overvoltage category	III
Energy limiting class	3
Terminals	1-10mm², max. 1,5Nm
Terminal screw	M4 (Pozidrive PZ2)
Build-in width	18mm
Mounting position	any
Supply possibility	top or bottom
Resistance to vibrations acc. to IEC 60068-2-7	5g (10,60 & 500Hz)
Standard	IEC 60898, EN 60898



Auxiliary switch PS ETIMAT

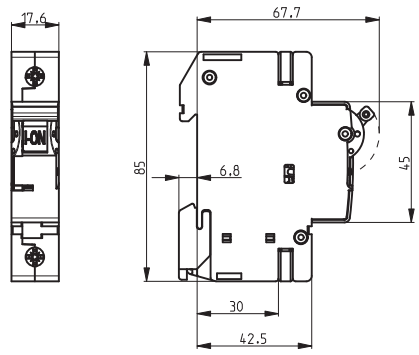
Technical data	
Rated current	6A (230 V AC), 1A (110 V DC), 0,5A (220V DC)
Terminal	1-4mm², max 0,5Nm
Terminal screw	M3 (PH1)
Contact	1 xb-contact (NC)
	1 xa-contact (NO)
Conditional short-circuit current	1 kA with fuse-link 20 A
Mounting position	any
Standard	EN-62019



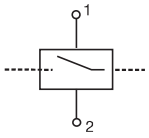


PS ETIMAT is an auxiliary switch only for ETIMAT 6.

Shunt trip release DA ETIMAT

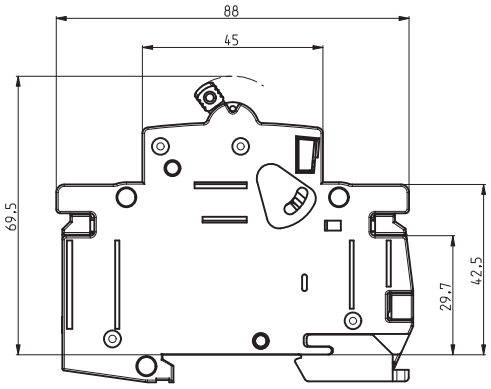


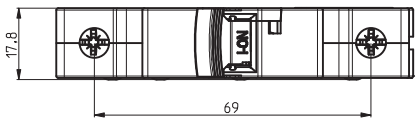
Technical data	
Nominal voltage	24V AC/DC, 48V AC/DC, 230V AC/DC
Rated frequency	50/60Hz
Max. inrush current	3,6 A
Terminals	1-25mm^2, max 3Nm
Terminal Screw	M5 (Pozidrive PZ2)
Build-in width	18mm
Mounting position	any
Mounting on the rail	EN 60715 (EN 50022)



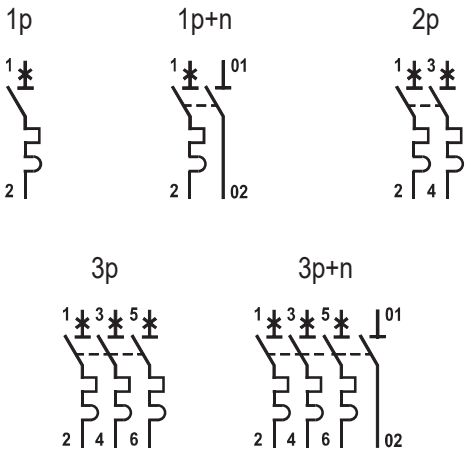
DA ETIMAT is a shunt trip release only for ETIMAT 6.

Miniature circuit breaker ETIMAT P10





Technical data	
Rated voltage	230/400 V AC; max. 60 V DC / pole
Rated current	B:1-63A, C:0.5-63A, D:0.5-32A, K, Z:0.5-32A
Rated frequency	50/60Hz
Shock resistance	30g.min. 2 shocks, t = 13ms
Rated short-circuit capacity	10 kA
Energy limiting class	3; B,C
Tripping characteristic	B, C, D, K, Z
Back-up fuse	100A gG
Index of protection	IP 20 (IP 40)
Terminals	1-25mm^2, max. 2,5Nm
Terminal screw	M5 (Pozidrive PZ2)
Mechanical endurance	20000 op.c.
Electrical endurance	20000 op.c. (In≤32A), 10000 op.c. (I_n>32A)
Ambient temperature	max. -25°C ... +55°C
Storage temperature	max. -40°C ... +70°C
Supply possibility	top or bottom
Build-in width	18 mm/pol
Insulating class	B
Overvoltage category	III
Mounting on the rail	EN 60715
Mounting position	any
Sealing possibility	✓
Terminal cover	✓
Locking device	✓
Resistance to vibrations acc. to IEC 60068-2-7	5g (10,60 & 500Hz)
Standards	EN 60898, IEC 60898, IEC 60947-2



Tripping characteristics			
Characteristic	Test current	Tripping time	Result
B, C, D	1,13 I_n	t ≥ 3600 s	No tripping
B, C, D	1,45 I_n	t < 3600 s	Tripping
B, C, D	2,55 I_n	1s < t < 60 s	Tripping
B	3,00 I_n	t ≤ 0,1 s	No tripping
C	5,00 I_n	t ≤ 0,1 s	No tripping
D	10,00 I_n	t ≤ 0,1 s	No tripping
B	5,00 I_n	t < 0,1 s	Tripping
C	10,00 I_n	t < 0,1 s	Tripping
D	20,00 I_n	t < 0,1 s	Tripping
K	1,05 I_n	t > 7200 s	No Tripping
K	1,20 I_n	t < 7200 s	Tripping
K	8,00 I_n	t ≤ 0,2 s	No Tripping
K	12,00 I_n	t < 0,2 s	Tripping
Z	2,00 I_n	t ≤ 0,2s	No Tripping
Z	3,00 I_n	t < 0,2s	Tripping