

# 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)

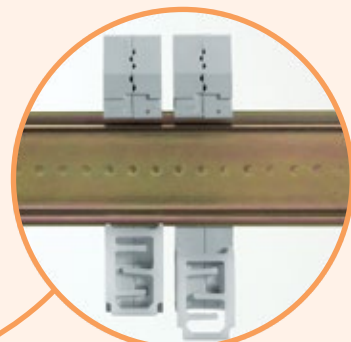
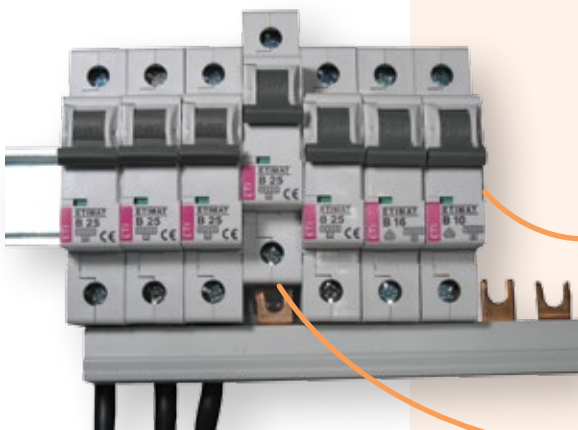


→ Better protection of terminals against touching the parts under voltage



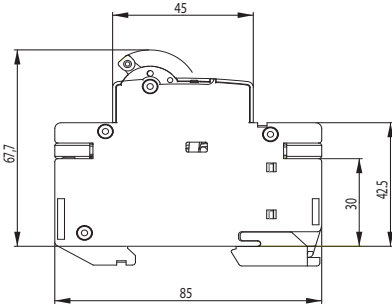
→ Double connection possibility

→ Every product is marked with EAN Code

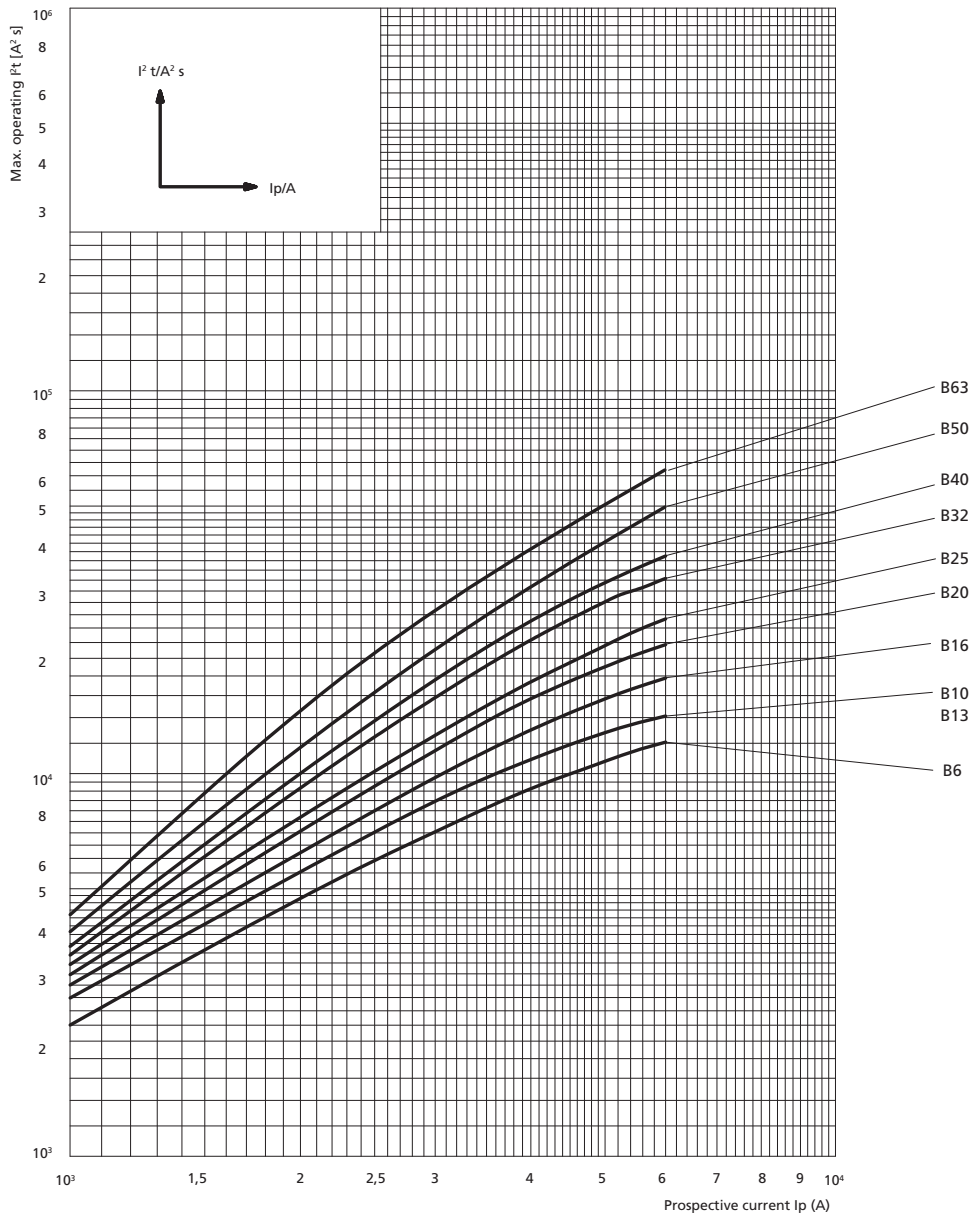


→ New method of mounting on the DIN rail and simple replacement

# Miniature circuit breaker ETIMAT 6



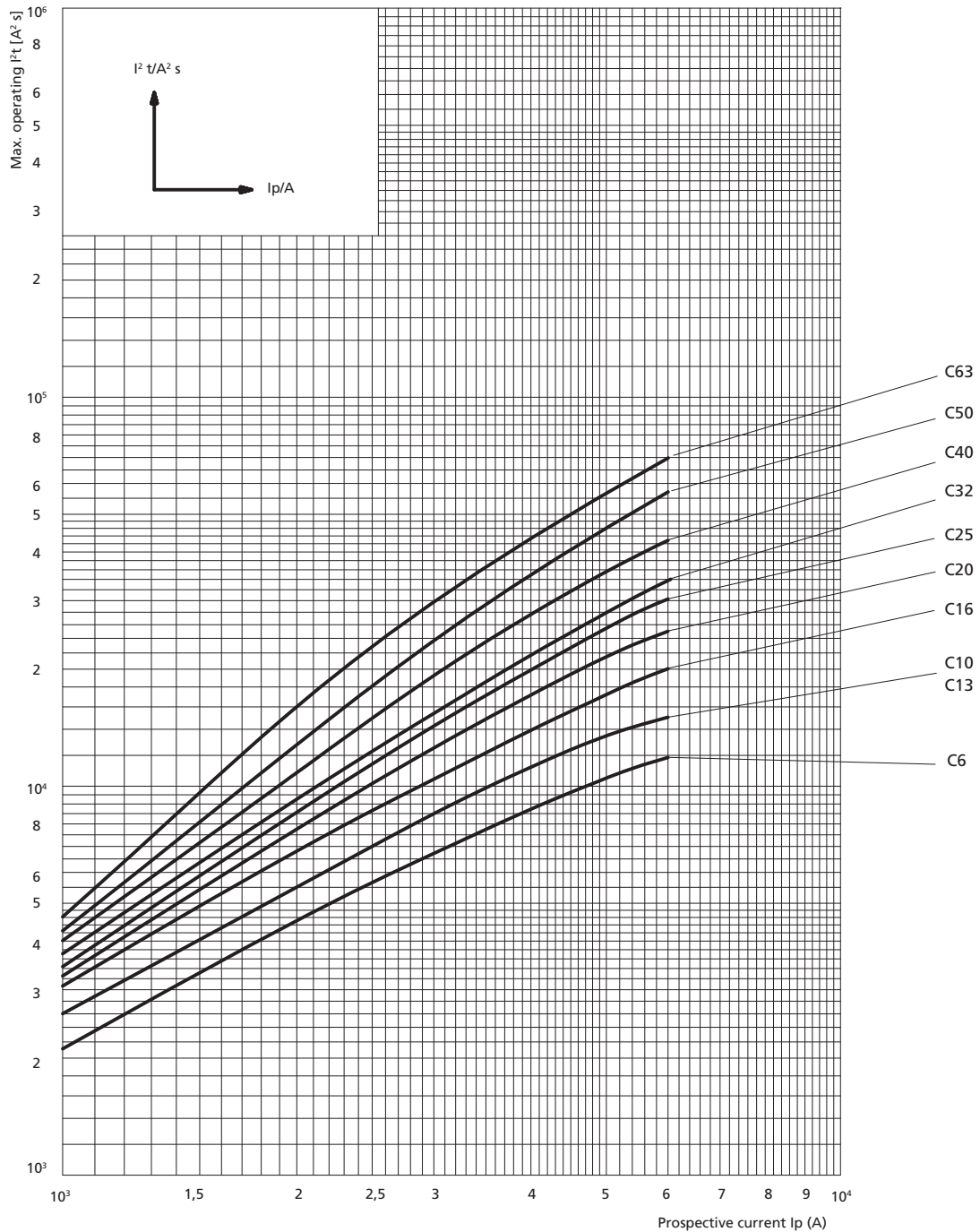
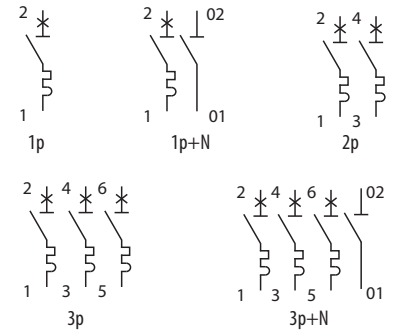
Technical data	
Rated voltage	230/400 V AC, max. 60 V DC / pole
Rated current	B:1-63A, C:0.5-63A, D:0.5-63A
Rated frequency	50/60 Hz
Rated short-circuit capacity	6 kA
Back-up fuse	100A gG
Energy limiting class	3; B, C
Tripping characteristic	B, C, D
Terminals	1 – 25 mm <sup>2</sup> , max. 3 Nm
Terminal 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
Overtoltage category	III
Resistance to vibrations acc. to IEC 60068-2-7	5g (10,60 & 500Hz)
Standards	IEC 60898, EN 60898, IEC 60947-2



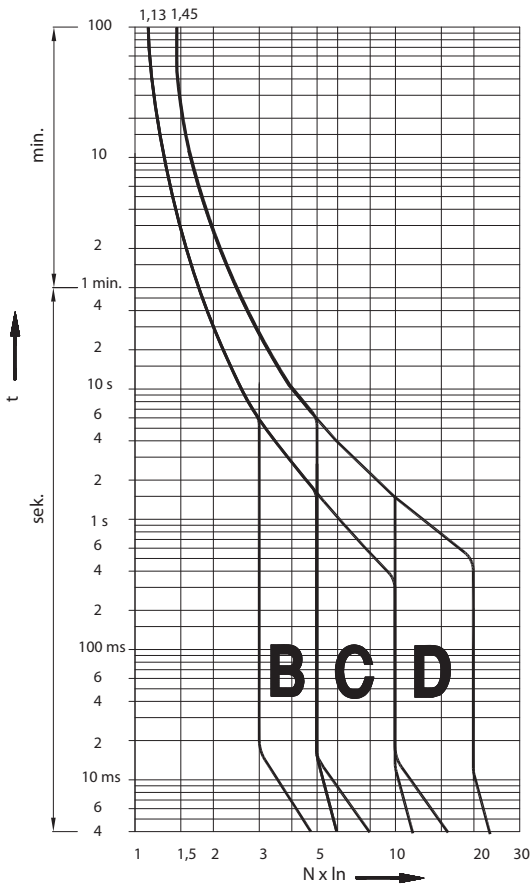
Technical data

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	$3,00 I_n$	$t \leq 0,1 \text{ s}$	No tripping
C	$5,00 I_n$	$t \leq 0,1 \text{ s}$	No tripping
D	$10,00 I_n$	$t \leq 0,1 \text{ s}$	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



I/t characteristic at 50 and 60Hz



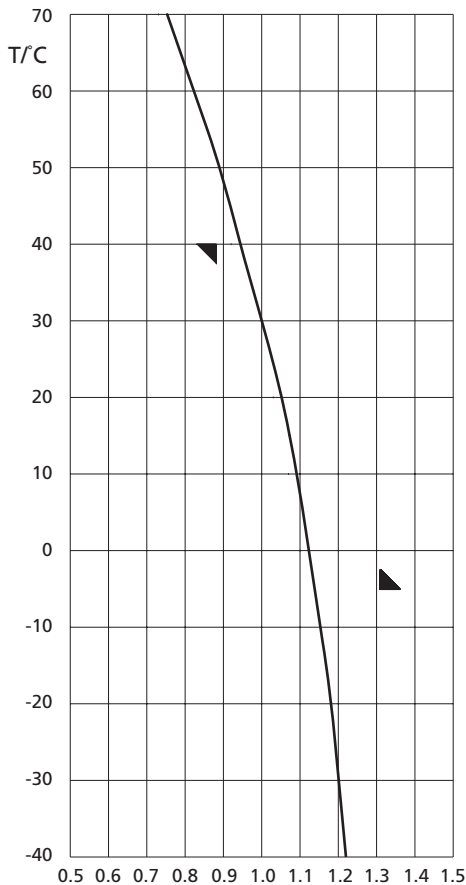
Conductor cross-section [mm <sup>2</sup> ]	Number of single conductors, rigid, single-wire CU conductor				
	1	2	3	4	5
1,5	✓	✓	✓	✓	✗
2,5	✓	✓	✓	✗	✗
4	✓	✓	✓	✗	✗
6	✓	✓	✗	✗	✗
10	✓	✓	✗	✗	✗
16	✓	✗	✗	✗	✗
25	✓	✗	✗	✗	✗

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

Conductor cross-section [mm <sup>2</sup> ]	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 <sub>n</sub> [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

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

Technical data

Resistance and power loss			
characteristic	$I_n$ [A]	R/pole [mΩ]	P/pole [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	

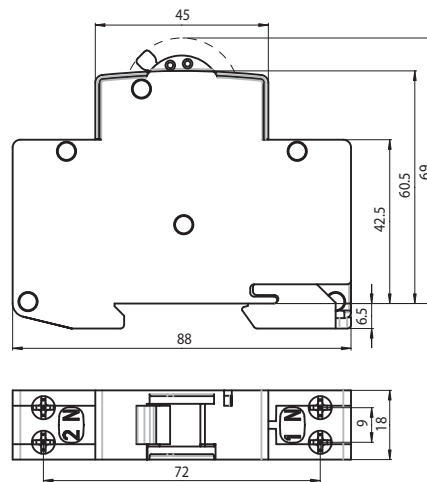
Selectivity												
ETIMAT	gG NV											
	20	25	32	35	40	50	63	80	100	125	160	
B 6	0,5	0,78	1,2	1,4	1,7	2,4	4,6	6,0	6,0	6,0	6,0	
B 10/13	0,45	0,65	1,1	1,3	1,6	2,2	4,0	6,0	6,0	6,0	6,0	
B 16		0,55	1,0	1,2	1,5	2,0	3,6	5,5	6,0	6,0	6,0	
B 20			0,85	1,2	1,5	1,8	3,1	4,6	6,0	6,0	6,0	
B 25				1,1	1,4	1,7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

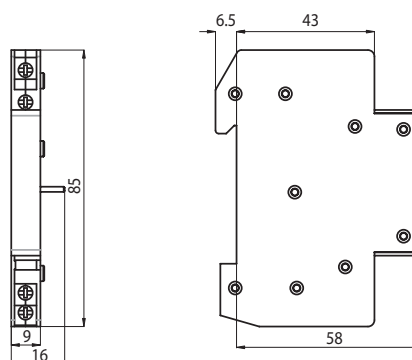
Miniature circuit breaker ETIMAT 1N

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
Overtoltage category	III
Energy limiting class	3
Terminals	1-10mm <sup>2</sup> , 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



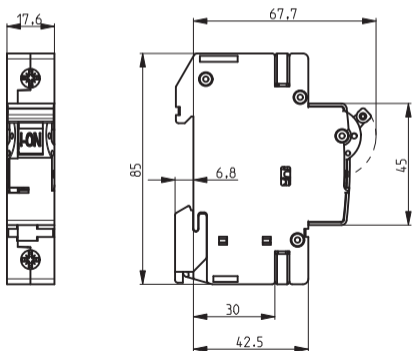
Auxiliary switch PS ETIMAT

Technical data	
Rated current	6A (230V AC), 1A (110V DC), 0,5A (220V DC)
Terminal	1-4mm <sup>2</sup> , 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



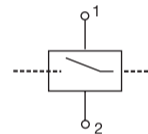
PS ETIMAT is an auxiliary switch only for ETIMAT 6.

## 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 <sup>2</sup> , 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.