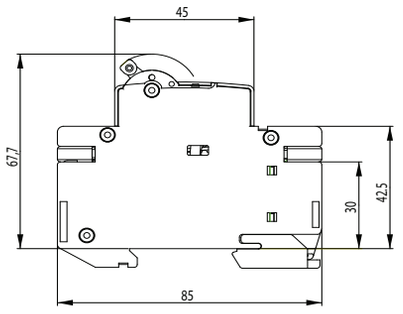
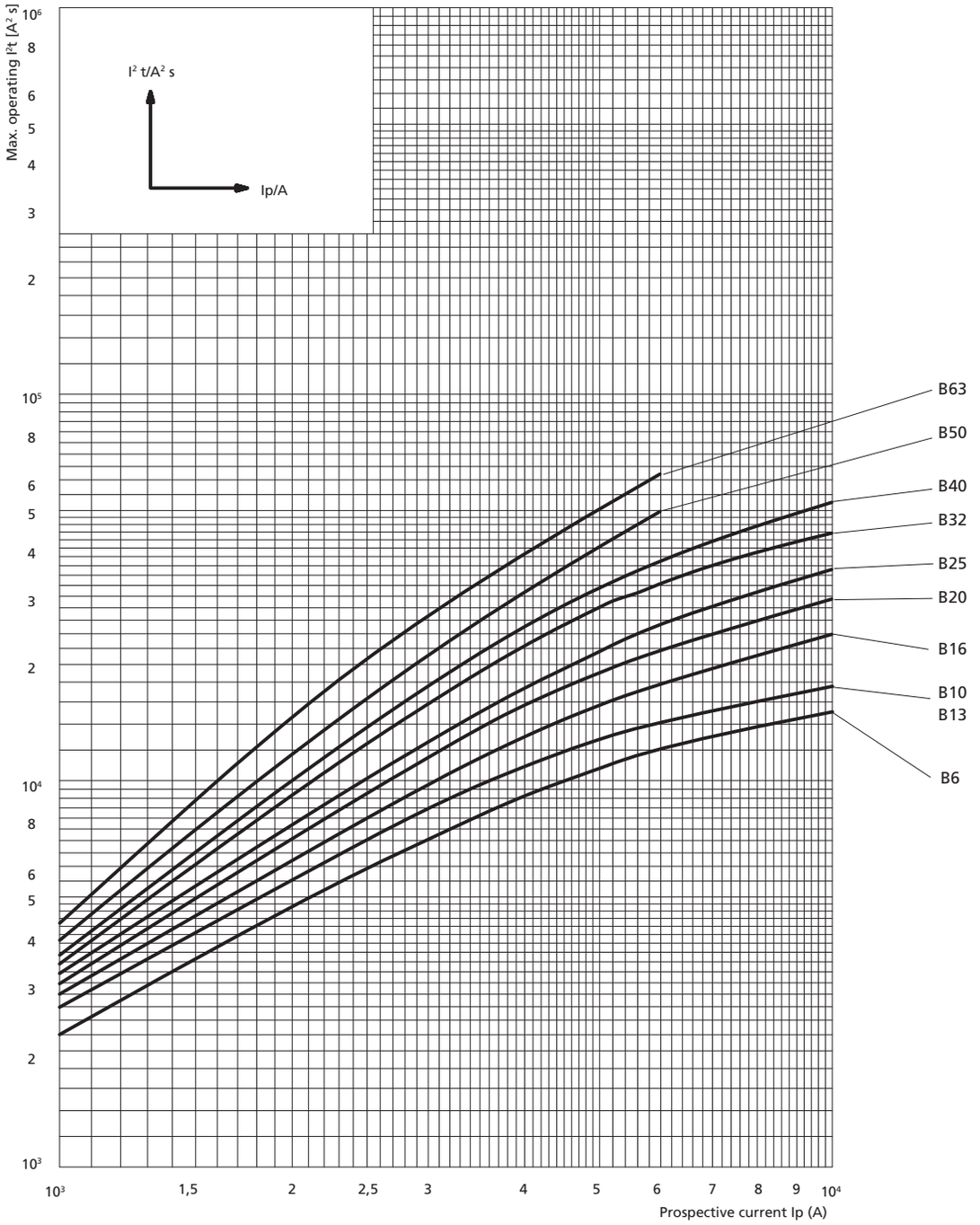
Miniature circuit breaker ETIMAT 10

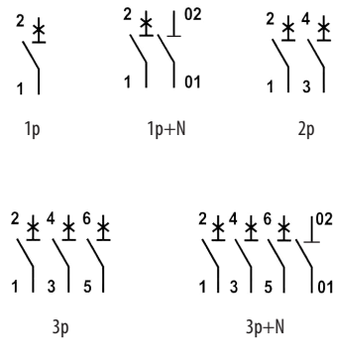


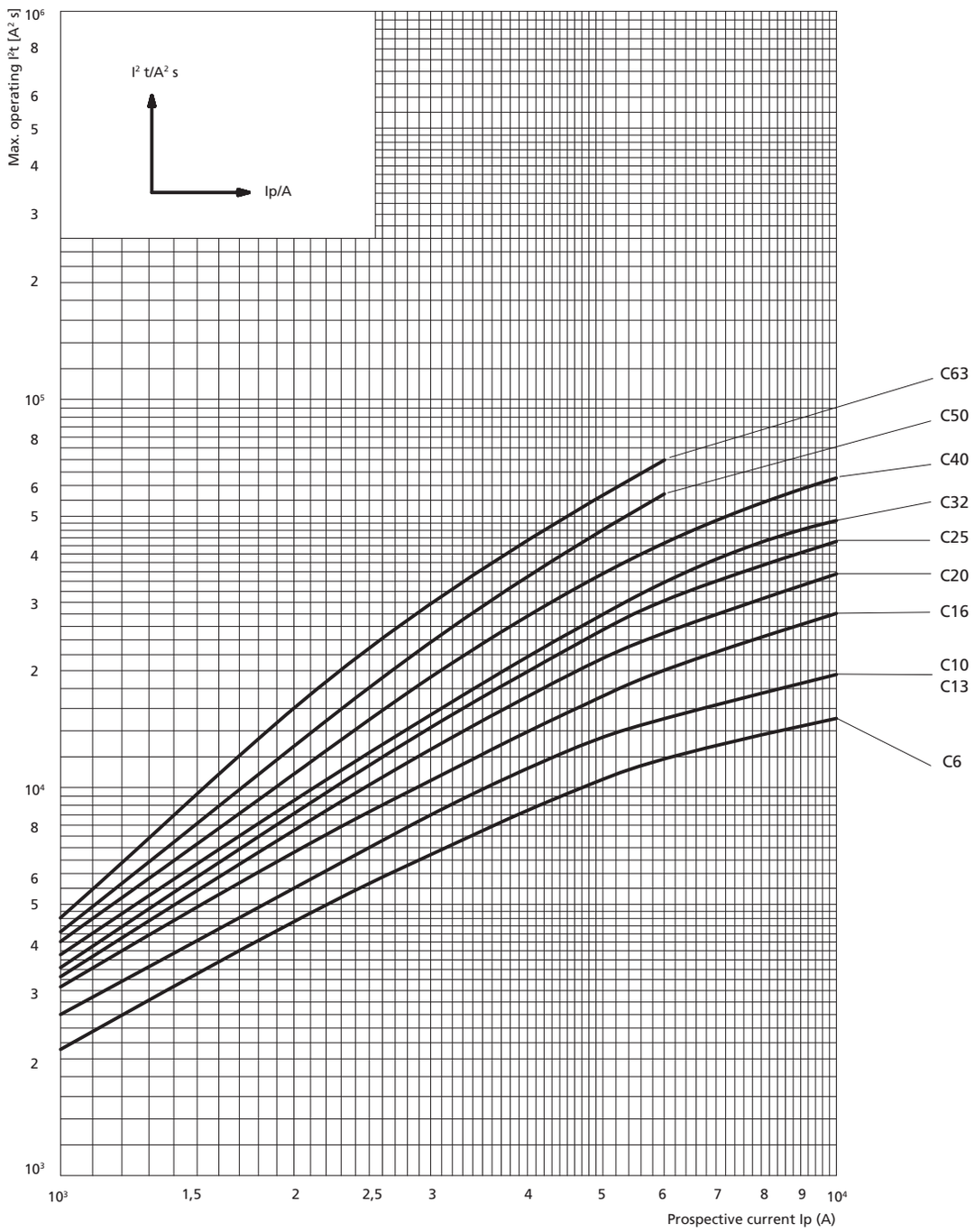
Technical data	
Rated voltage	230/400 Va.c., max. 60 Vd.c.
Rated current	0,5 – 40 A
Rated frequency	50/60 Hz
Rated short-circuit capacity	10 kA (IEC 60898), 15 kA (IEC 60947-2)
Energy limiting class	3
Tripping characteristic	B, C or D
Terminals	1 – 25 mm², max. 3 Nm
Build-in width	18 mm/pol
Isolating class	B
Mounting on the rail	EN 60715 (EN 50022)
Sealing possibility	ON or OFF
Standards	IEC 60898, EN 60898, IEC 60947-2, EN-60947-2



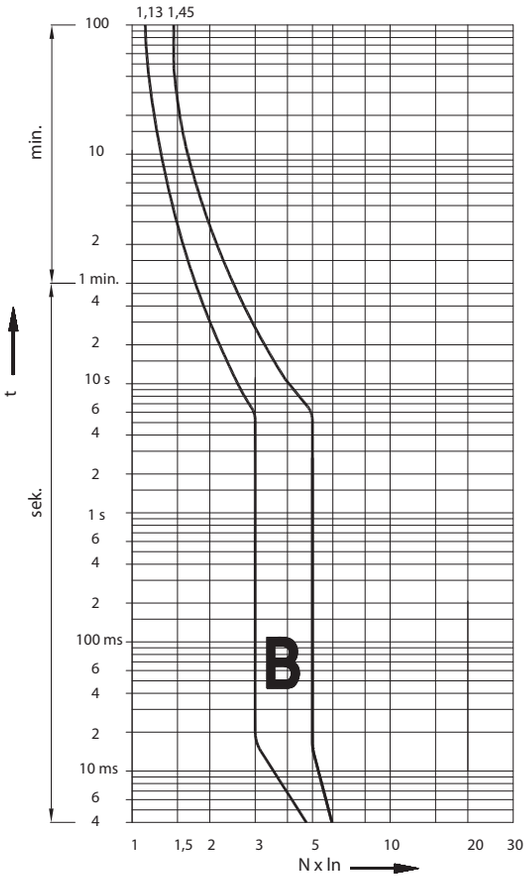
Tripping characteristics

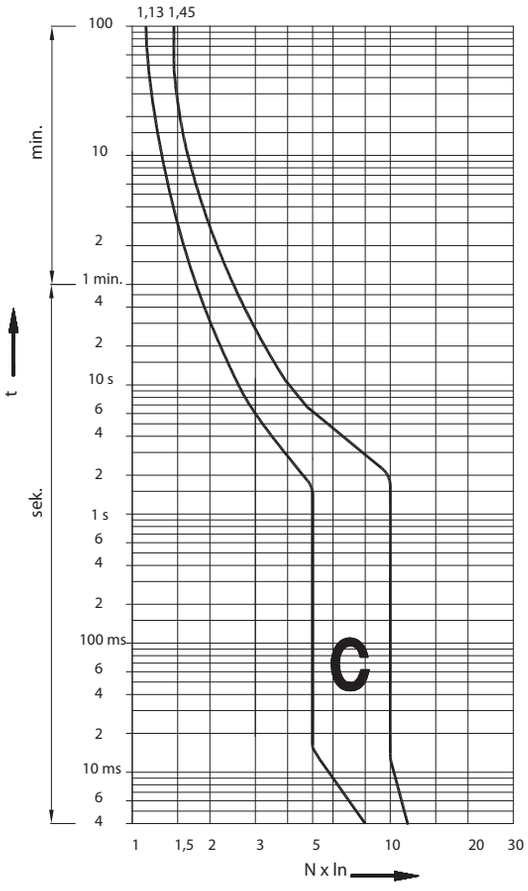
Characteristic	Test current	Tripping time	Result
B, C, D	1,13 I_n	t ≥ 3600 s	No tripping
B, C, D	1,45 I_n	t < 3600 s	Tripping
B, C, D	2,55 I_n	1s < t < 60 s	Tripping
B	3,00 I_n	t ≥ 0,1 s	No tripping
C	5,00 I_n	t ≥ 0,1 s	No tripping
D	10,00 I_n	t ≥ 0,1 s	No tripping
B	5,00 I_n	t < 0,1 s	Tripping
C	10,00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

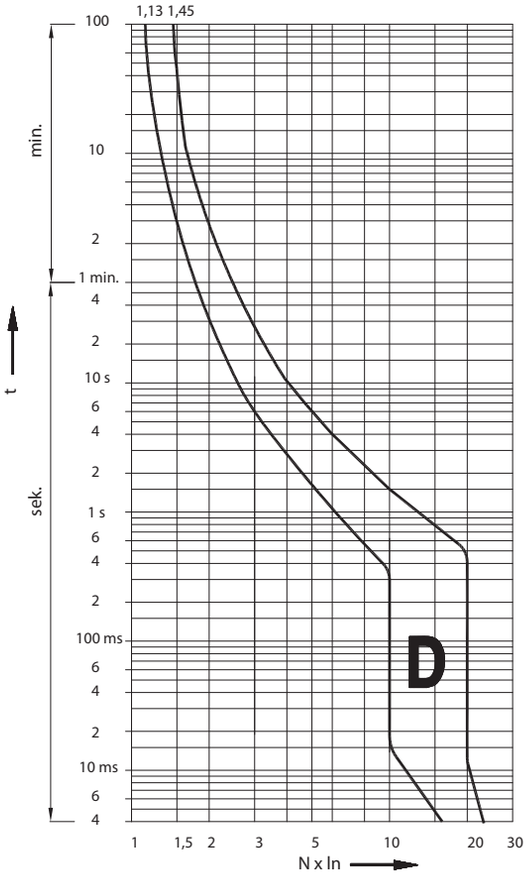




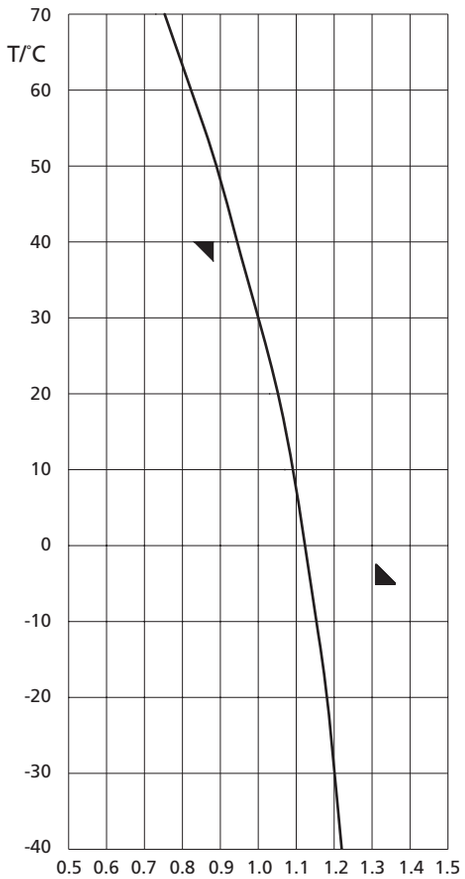
I/t charasteristic at 50 and 60Hz







Effect of the ambient temperature on the tripping charasteristic



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

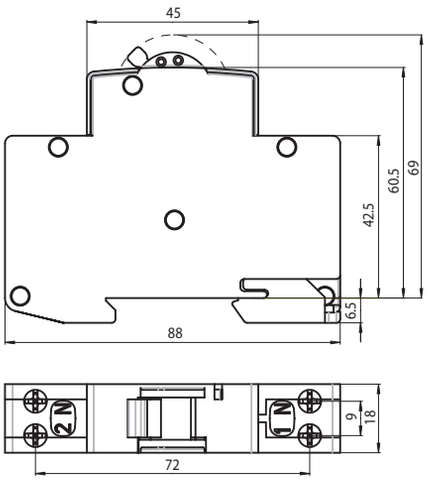
characteristic	I_n [A]	R [mΩ]	P [w]
C, D	0,5	4500	1,12
	1	1800	1,80
	1,6	450	1,15
	2	280	1,08
	4	110	1,70
B, C, D	6	29	1,08
	10	13	1,30
	13	11,6	2,00
	16	9,0	2,30
	20	5,3	2,00
	25	4,1	2,50
	32	2,6	2,70
	40	1,96	3,20
	50	1,5	4,00
	63	1,15	4,80

Selectivity

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

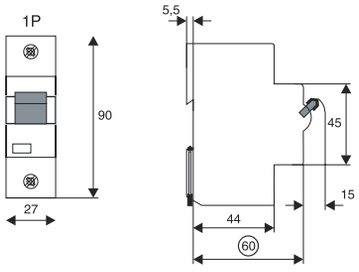
type	gG NV										
	20	25	32	35	40	50	63	80	100	125	160
C 6	0,52	0,82	1,3	1,5	2,0	2,7	5,1	9,0	10	10	10
C 10/13	0,47	0,70	1,1	1,4	1,8	2,3	4,0	7,0	10	10	10
C 16		0,61	0,92	1,2	1,5	1,9	3,2	5,0	9,0	10	10
C 20			0,90	1,1	1,4	1,7	2,9	4,2	8,0	10	10
C 25				1,0	1,3	1,6	2,7	3,9	6,0	10	10
C 32					1,2	1,5	2,3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



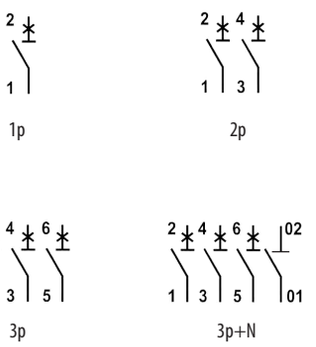
Technical data	
Rated voltage U_n	230 Va.c.
Rated current I_n	6-32 A
Rated frequency f_n	50Hz
Rated short-circuit capacity	6.000 A
Tripping characteristics	B, C
Terminals	1-10mm^2
Build-in width	18mm
Standard	IEC 60898, EN 60898

Miniature circuit breaker ETIMAT 10 80-125 A



ETIMAT 10, 80-125 A,

Technical data			
Rated voltage	80-125 A	230/400V a.c., 60V d.c.	
Rated current	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 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	80-125 A	2,5-50mm^2	
Build-in width	80-125 A	27mm/pole	
Mounting on the rail	EN 60715 (EN 50022)		
Mechanical durability	80-125 A	min. 20000 cycles	
Sealing possibility	ON or OFF		
Standards	EN 60898, EN 60947-2		

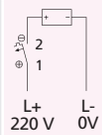
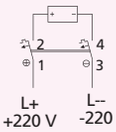
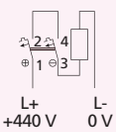
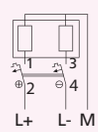


Miniature circuit breaker ETIMAT 10 DC

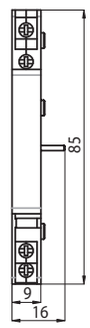
Technical data	
Rated voltage - for 1-pole U_n	220 Vd.c.
- for 2-pole U_n	220 V /440 Vd.c.
Rated time constant L/R	4 ms
Rated current IN	0,5 - 63 A
Rated short-circuit capacity	6.000 A
Tripping characteristic	B, C
Energy limiting class	3
Isolating class	B
Back-up fuse	100 A gG
Terminals	1-25mm², max. 3Nm
Standards	IEC 60898, EN 60898, DIN VDE 0641

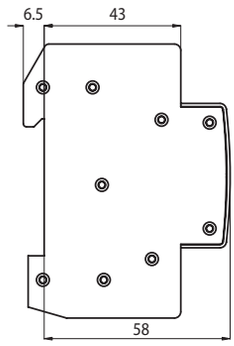
1p

2p

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				
	L+ 220 V L- 0V	L+ +220 V L- -220	L+ +440 V L- 0 V	L+ L- M

Auxiliary switch PS ETIMAT 10

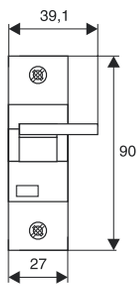


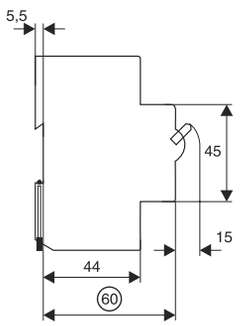


Technical data	
Rated current	6 A (230 V a.c.), 1 A (110 V d.c.)
Terminal	1-4mm²
Contact	1 xb-contact (NC)
	1 xa-contact (NO)
Conditional short-circuit current	1 kA with fuse-link 20 A
Standard	EN-62019

PS ETIMAT 10 is an auxiliary switch for ETIMAT 10 0,5-40 A, ETIMAT 10 DC and ETIMAT 6.

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)