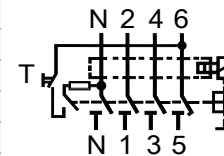
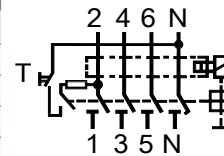


A and AC type residual current circuit breaker EFI-P4(R) & EFI-4

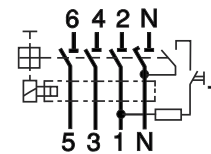
Technical data EFI-P4(R) Instantaneous type AC & A, EFI-4 Instantaneous type AC & A		
Type	EFI-P4, EFI-P4R 16-63A	EFI-4 80A, EFI-P4 R 100A, 125A
Electrical		
Rated Voltage U_n	400/415V AC	400V AC
Rated current I_n	16, 25, 40, 63A	80, 100, 125A
Rated frequency f_n	50/60Hz	50Hz
Rated insulation voltage U_i	440V	440V
Rated impulse withstand voltage (1,2/50 μ s)	4kV	4kV
Peak withstand current (8/20 μ s)	400A	
Electrical isolation	> 4mm contact space	
Rated residual operating current $I_{\Delta n}$	0,03; 0,1; 0,3 & 0,5A	
Rated conditional short-circuit current I_{cn}	10kA	10kA
Rated making and breaking capacity I_m	630A	800A ($I_n=80A$); 1250A ($I_n=100, 125A$)
Max back-up fuse for short circuit protection	63A gG	80A ($I_n=80A$); 125A ($I_n=100, 125A$)
Voltage range test circuit	150-264V	150-264V
Min. operating voltage	voltage independent	voltage independent
Insulating class	B	B
Standards	IEC/EN 61008	IEC/EN 61008
Mechanical Endurance (cycles)	> 10.000	> 4.000
Electrical endurance (cycles)	> 4.000	> 2.000
Shock resistance acc. to	IEC/EN 61008-1	IEC/EN 61008-1
Resistance to vibrations acc. To IEC 60068-2-7	5g (10, 60 & 500Hz)	5g (10, 60 & 500Hz)
Mechanical		
Frame size	45mm	45mm
Device height	68mm (DIN rail acc to EN6071)	
Device width	72mm (4 x Module Units)	72mm (4 x Module Units)
Degree of protection	IP20	IP20
Upper and lower terminals	open mounted/lift terminals	
Terminal capacity	1-25mm ²	1-25mm ² ($I_n=80A$), 1-50mm ² ($I_n=100, 125A$)
Terminal screw	M5 (Pozidrive PZ2)	M5 (80A) , M6 (100-125A) (Pozidrive PZ2)
Terminal torque	max. 3Nm	max 2,5Nm (80A); max 5,0Nm (100&125A)
Busbar thickness	0,8 - 2 mm	0,8 - 2 mm
Operating temperature	-25°C ... +55°C	-25°C ... +55°C
Storage and transport temperature	-40°C ... +70°C	-35°C ... +60°C
Resistance to climatic conditions	IEC/EN 61008	acc. to IEC 60068-2-30: 28 cycles (55 °C, 95 % relative humidity)
Contact position indicator	mechanical red/green	
Mounting position	any	
Mounting on the rail	35mm acc to EN50022	
Supply possibility	top or bottom	

EFI-P4, EFI-P4R 16 - 63A

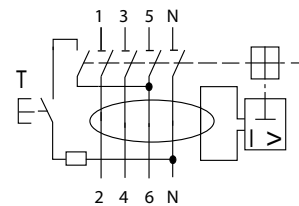


Version with N-pole on the left

EFI-4 80A



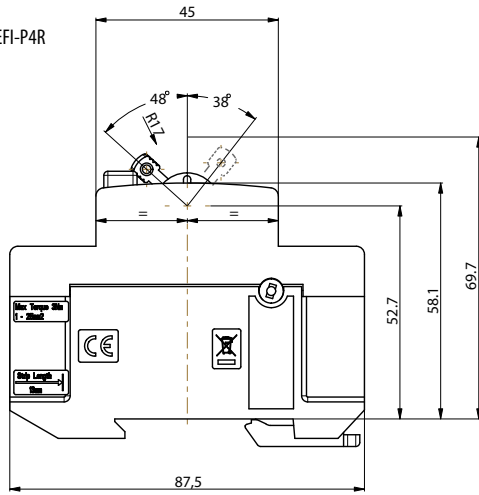
EFI-P4R 100 A, 125A



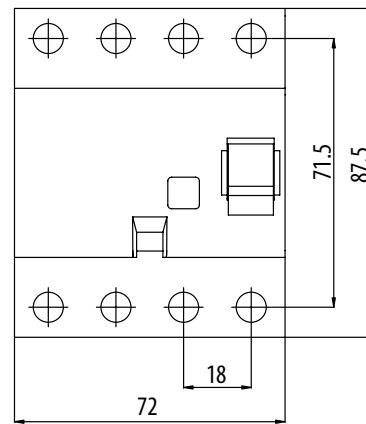
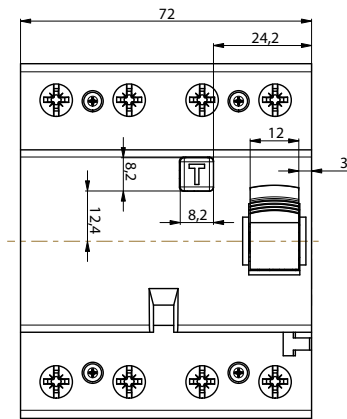
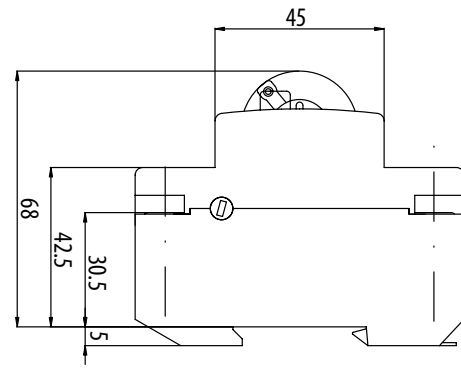
I_n [A]	Power dissipation EFI-P4	
	P/pole [W]	
16	0,48-0,62	
25	1,27-1,52	
40	4,14-5,00	
63	2,45-3,00	
80		
100	7,35-7,65	
125	10,7-11,3	

Technical data

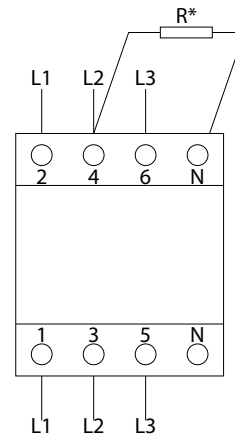
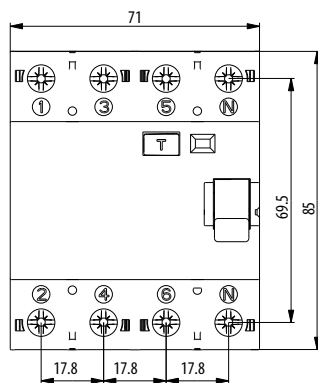
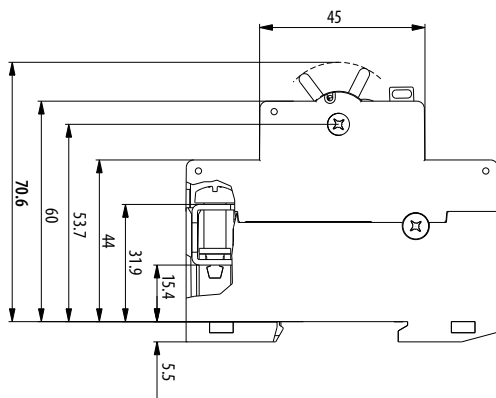
EFI-P4, EFI-P4R



EFI-4 80A, G/KV, S



EFI-P4 R 100&125A



RCD EFI-P4 Type in 3-phase system without neutral conductor:

- 30mA: R=2k Ω /1W/500V
- 100mA: R=1k Ω /1W/500V
- 300mA: R=470 Ω /2W/500V
- 500mA: R=270 Ω /3W/500V

* Resistor (R) has to be connected between N and 2 or L3 as to ensure proper functionality of the test button.

Technical data			
Type	G/KV type	S type	S Reset
Electrical			
Rated voltage U_n	400/415V AC	400/415V AC	400V AC
Rated current I_n	25, 40, 63A	25, 40, 63A	100 & 125A
Rated Insulation voltage U_i	440V	440V	440V
Rated frequency f_n	50/60Hz	50/60Hz	50Hz
Peak withstand current	3kA (8/20 μ s) surge current proof	5kA (8/20 μ s) surge current proof	3kA (8/20 μ s) surge current proof
Electrical isolation	> 4mm contact space	> 4mm contact space	> 4mm contact space
Rated residual operating current $I_{\Delta n}$	0,03; 0,1 & 0,3A	0,1 & 0,3A	0,1 & 0,3A
Rated conditional short-circuit current I_{cn}	10kA	10kA	10kA
Rated making and breaking capacity I_m	630A	630A	1250A
Maximum back-up fuse	80A gG	80A gG	125A gG
Insulating class	B	B	B
Standard	IEC/EN 61008, OVE E 8601	IEC/EN 61008	IEC/EN 61008
Mechanical endurance (op. c.)	> 4000	> 4000	> 5000
Electrical endurance (op. c.)	> 2000	> 2000	> 2000
Mechanical			
Frame size	45mm	45mm	45mm
Device height	68mm (DIN rail acc to EN60715)	68mm (DIN rail acc to EN60715)	70,6mm (DIN rail acc to EN60715)
Device width	72mm (4 x Module units 18mm)	72mm (4 x Module units 18mm)	71mm (4 x Module units 17,8mm)
Degree of protection	IP20	IP20	IP20
Upper and lower terminals	open mounted/lift terminals	open mounted/lift terminals	open mounted/lift terminals
Terminal capacity	1-25mm ²	1-25mm ²	1-50mm ²
Terminal screw	M5 (Pozidrive PZ2)	M5 (Pozidrive PZ2)	M6 (Pozidrive PZ2)
Terminal torque	2-2,5Nm	2-2,5Nm	2,5-5Nm
Busbar thickness	0,8 - 2 mm	0,8 - 2 mm	0,8 - 2 mm
Operating temperature	-25°C ... +55°C	-25°C ... +55°C	-25°C ... +40°C
Storage and transport temperature	-40°C ... +70°C	-40°C ... +70°C	-35°C ... +60°C
Resistance to vibrations acc. to IEC 60068-2-7	5g (10,60 & 500Hz)	5g (10,60 & 500Hz)	/
Resistance to climatic conditions	IEC/EN 61008	IEC/EN 61008	acc. to IEC 60068-2-30: 28 cycles (55 °C, 95 % relative humidity)
Contact position indicator	mechanical red/green	mechanical red/green	mechanical red/green
Supply possibility	Top or bottom	Top or bottom	Top or bottom
Mounting position	any	any	any

I_n [A]	Power dissipation EFi-4 G/KV & S type
	P / pole (W)
25	1,40-1,61
40	2,73 - 4,11
63	4,76 - 5,69
100	7,35-7,65
125	10,7-11,3

Conductor cross-section [mm ²]	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

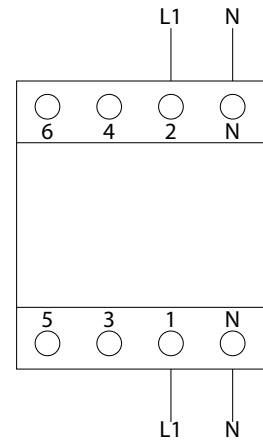
Conductor cross-section [mm ²]	Number of single conductors, flexible Cu conductors with cable ferrule					
	1	2	3	4	5	6
1,5	✓	✓	✓	✓	✓	✓
2,5	✓	✓	✓	✓	✓	✓
4	✓	✓	✓	✓	✓	✓
6	✓	✓	✓	✗	✗	✗
10	✓	✓	✗	✗	✗	✗
16	✓	✗	✗	✗	✗	✗
25	✓	✗	✗	✗	✗	✗

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

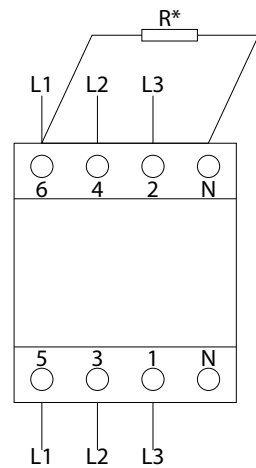
Technical data

B and B+ type residual current circuit breaker EFI-4

Technical data		
Type	B & B+	
Electrical		
Design according to	IEC/EN 61008, IEC/EN 62423 B+ -> VDE 0664-400	
Current test marks as printed onto the device		
Rated voltage U_n	230/400 V AC	
Rated frequency f_n	50/60Hz	
Mode of operation	"A type functionality: voltage independent B and B+ type functionality: voltage dependent"	
Operation voltage electronic	50 – 253V AC	
Voltage range test circuit	196 – 253V AC	
Rated residual operating current $I_{\Delta n}$	Instantaneous	30, 100, 300 mA
	K - short time delayed	30, 100, 300 mA
	S - selective	100, 300 mA
Sensitivity	Alternating, pulsed and smooth direct currents	
Rated insulation voltage U_i	440 V	
Rated impulse withstand voltage U_{imp}	4 kV (1.2/50µs)	
Rated conditional short-circuit current I_{cn}	10 kA	
Rated making and breaking capacity I_m	800 A	
Peak withstand current	3 kA (8/20 µs) surge current proof	
Electrical isolation	> 4 mm contact space	
Maximum back-up fuse $I_n = 25-63A$	Short circuit and overload protection 100 A gG/gL	
Endurance (operating cycles)	electrical components	≥ 2000
	mechanical components	≥ 4000
Mechanical		
Frame size	45 mm	
Device height	68 mm (DIN rail acc to EN60715)	
Device width	72 mm (4xModule Units 18mm)	
Degree of protection	IP20	
Upper and lower terminals	open mounted/lift terminals	
Terminal protection finger and hand touch safe	IEC/EN 61008	
Terminal capacity	1 - 25 mm ²	
Terminal screw	M5 (Pozidrive PZ2)	
Terminal torque	2 - 2.5 Nm	
Busbar thickness	0.8 - 2 mm	
Operating temperature	-25°C ... +55°C	
Storage- and transport temperature	-40°C ... +70°C	
Resistance to vibrations acc. to IEC 60068-2-7	5g (10,60 & 500Hz)	
Resistance to climatic conditions	IEC/EN 61008	
Contact position indicator	mechanical red / green	
Supply possibility	top or bottom	
Mounting position	any	



RCD ETI Type B & B+ in 1-phase system $U_n=230V$



RCD ETI Type B & B+ in 3-phase system without neutral conductor - $U_n=400V$
 30mA: R=2k7/1W (500V)
 100mA: R=7k5/1W (500V)
 300mA: R=2k7/1W (500V)

* Resistor (R) has to be connected between N and L1 as to ensure proper functionality of the test button.

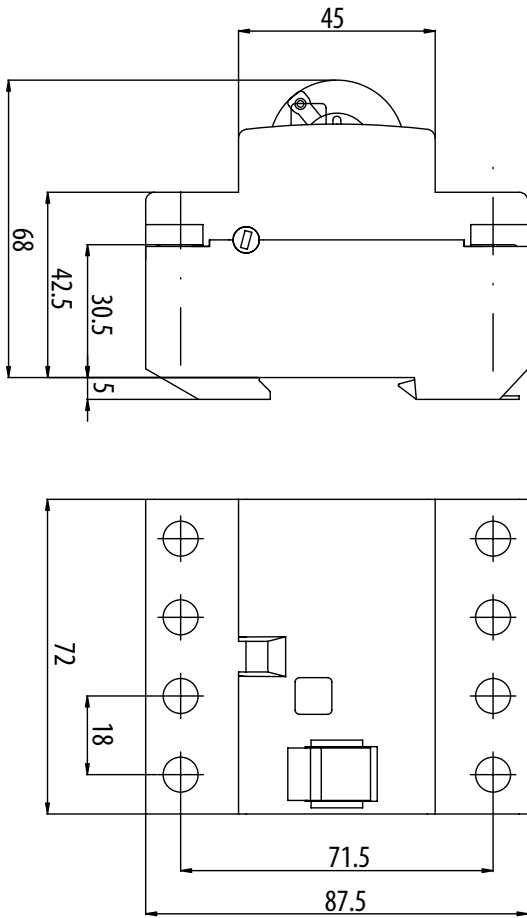
Conductor cross-section [mm ²]	Number of single conductors, rigid, single-wire CU conductor				
	1	2	3	4	5
1,5	✓	✓	✓	✓	✗
2,5	✓	✓	✓	✗	✗
4	✓	✓	✓	✗	✗
6	✓	✓	✗	✗	✗
10	✓	✓	✗	✗	✗
16	✓	✗	✗	✗	✗
25	✓	✗	✗	✗	✗

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

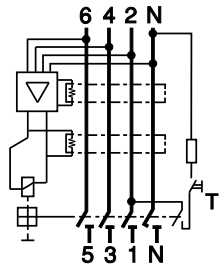
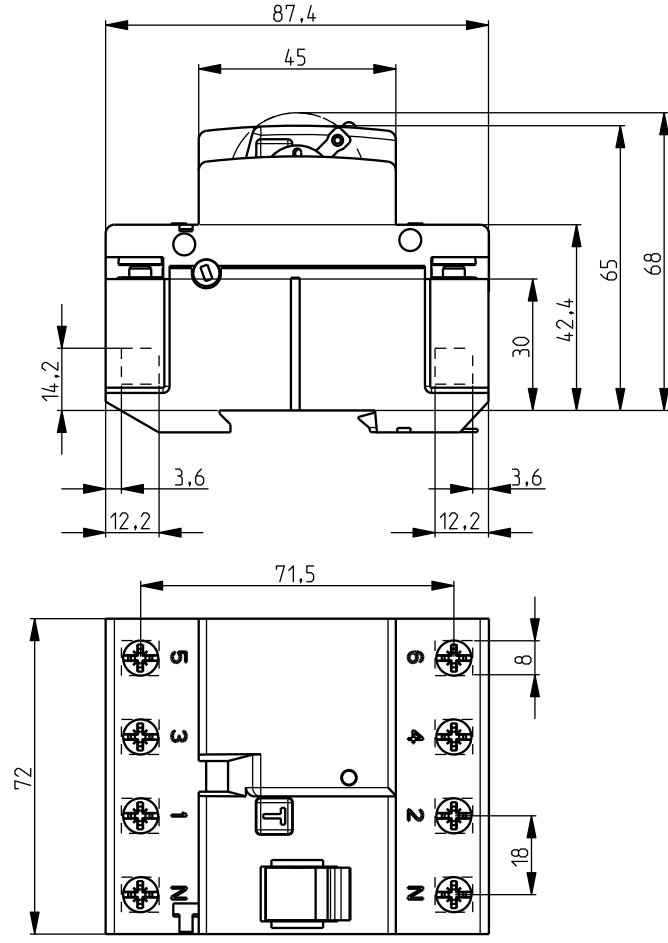
Conductor cross-section [mm ²]	Number of single conductors, flexible Cu conductors with cable ferrule					
	1	2	3	4	5	6
1,5	✓	✓	✓	✓	✓	✓
2,5	✓	✓	✓	✓	✓	✓
4	✓	✓	✓	✓	✓	✓
6	✓	✓	✓	✗	✗	✗
10	✓	✓	✗	✗	✗	✗
16	✓	✗	✗	✗	✗	✗
25	✓	✗	✗	✗	✗	✗

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

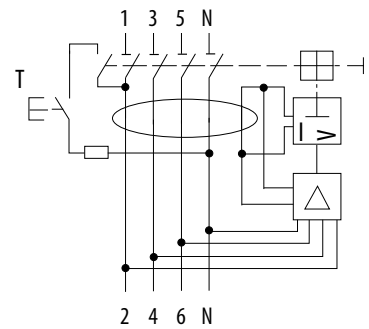
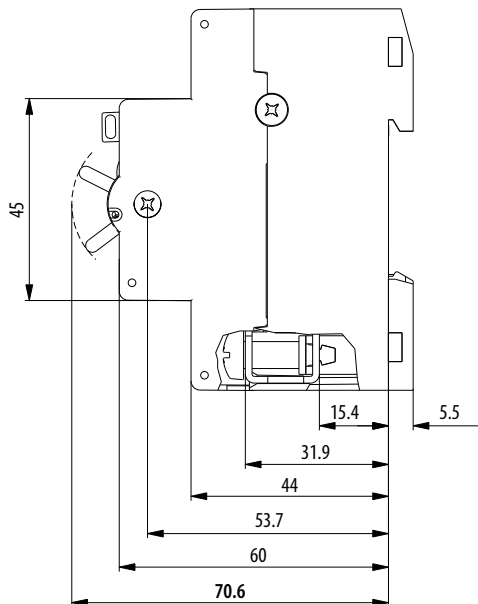
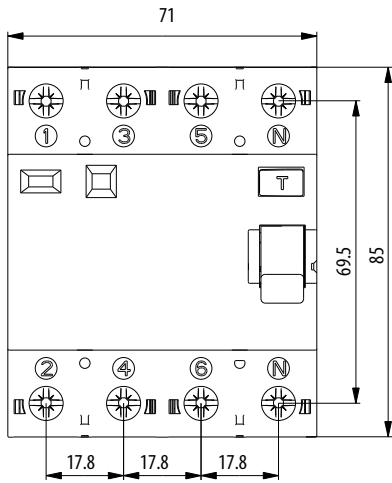
Instantaneous



K-Short time delay, S-Selective

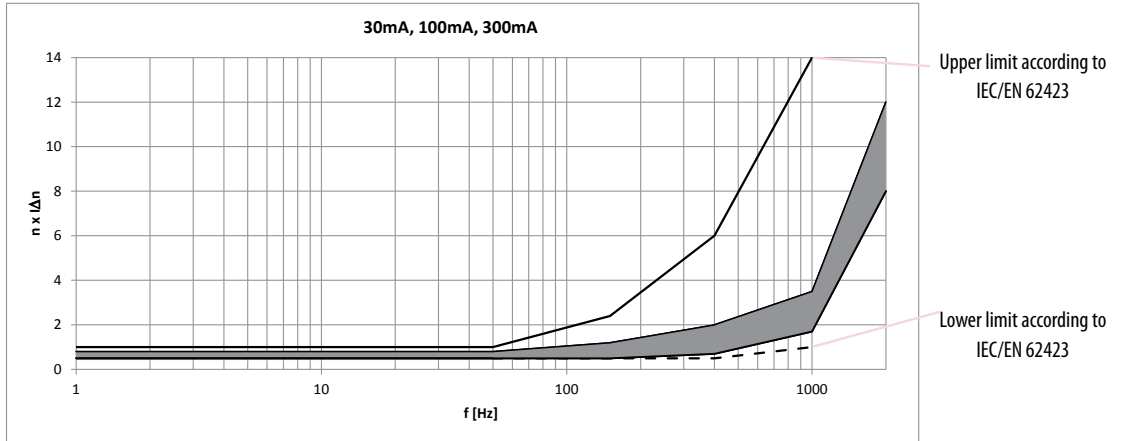


G/KV - Reset (100 & 125A)

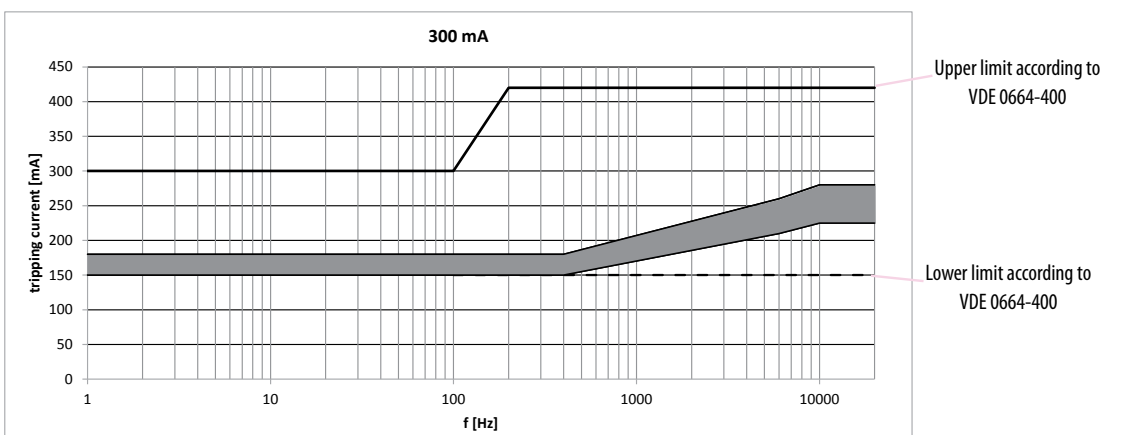
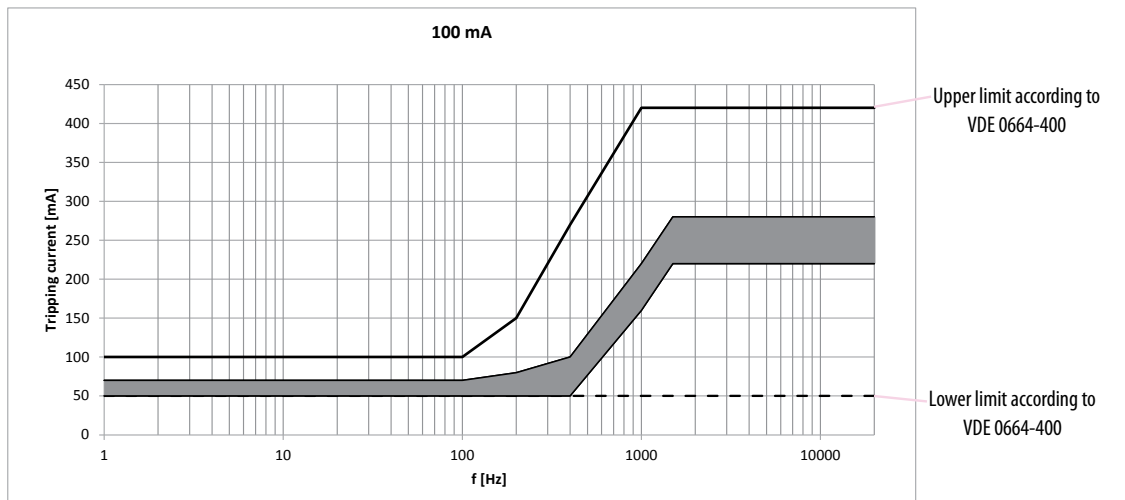
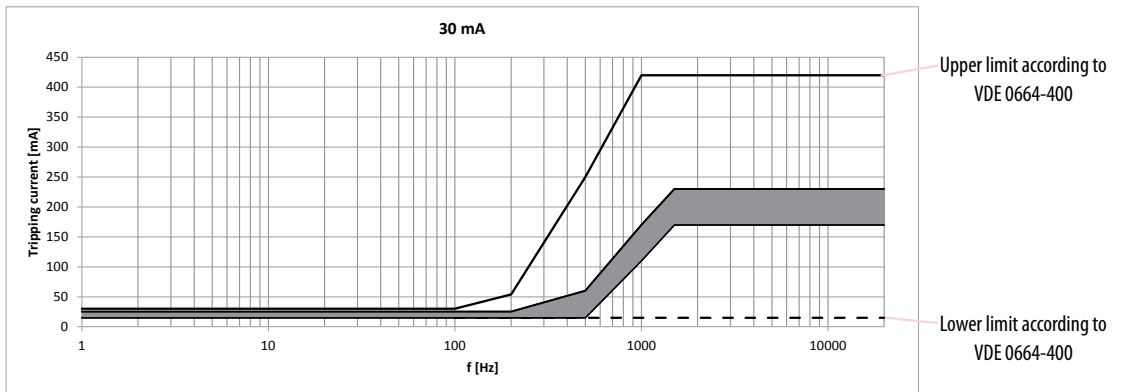


Technical data

EFI B type

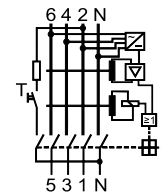
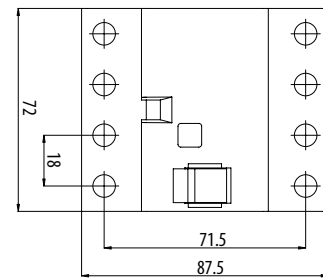
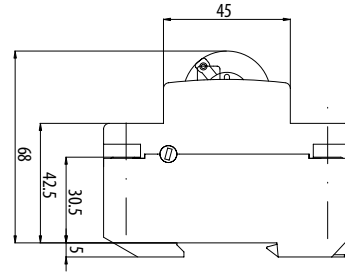


EFI B+ type



Residual Current Circuit Breakers for Protection of EV Charging Stations EFI eV

Technical data EFI-4 A eV	
Type	EFI-4 A eV
Electrical	
Rated Voltage U_n	400/415V AC
Rated current I_n	25, 40, 63 A
Rated frequency f_n	50/60Hz
Mode of operation	A type functionality : voltage independent DC functionality: voltage dependent
Sensitivity	Alternating, pulsed and smooth direct currents
Rated insulation voltage U_i	440V
Rated impulse withstand voltage (1,2/50 μ s)	4kV
Electrical isolation	> 4mm contact space
Rated residual operating current $I_{\Delta n}$	30 mA
DC tripping treshold	6 mA
Rated conditional short-circuit current I_m	10kA
Rated making and breaking capacity I_m	630A
Max back-up fuse for short circuit protection	80A gG
Voltage range test circuit	196 – 253 V AC
Min. operating voltage	80 V
Standards	IEC/EN 61008, IEC 62955:2018
Mechanical Endurance (cycles)	10.000
Electrical endurance (cycles)	2.000
Shock resistance acc. to	IEC/EN 61008-1
Resistance to vibrations acc. To IEC 60068-2-7	5g (10, 60 & 500Hz)
Mechanical	
Frame size	45mm
Device height	68mm (DIN rail acc to EN6071)
Device width	72mm (4 x Module Units)
Degree of protection	IP20
Overvoltage category	III
Upper and lower terminals	open mounted/lift terminals
Terminal capacity	1-25mm ²
Terminal screw	M5 (PoziDrive PZ2)
Terminal torque	max. 3Nm
Busbar thickness	0,8 - 2 mm
Operating temperature	-25°C ... +65°C
Storage and transport temperature	-40°C ... +85°C
Resistance to climatic conditions	IEC/EN 61008
Contact position indicator	mechanical red/green
Mounting position	any
Mounting on the rail	35mm acc to EN50022
Supply possibility	top or bottom
Locking device	Locking is possible through button and cover



I_n [A]	Maximum power dissipation EFI-4 A eV	
	P/pole [W]	
25	1,33	
40	3,12	
63	6,62	

conductor cross-section [mm ²]	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

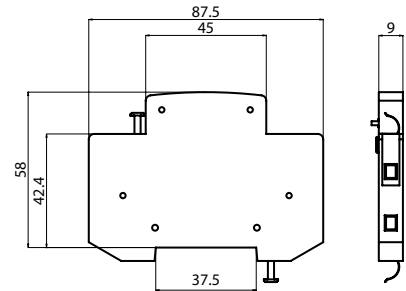
Conductor cross-section [mm ²]	Number of single conductors, flexible Cu conductors with cable ferrule					
	1	2	3	4	5	6
1,5	✓	✓	✓	✓	✓	✓
2,5	✓	✓	✓	✓	✓	✓
4	✓	✓	✓	✓	✓	✓
6	✓	✓	✓	✗	✗	✗
10	✓	✓	✗	✗	✗	✗
16	✓	✗	✗	✗	✗	✗
25	✓	✗	✗	✗	✗	✗

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

Technical data

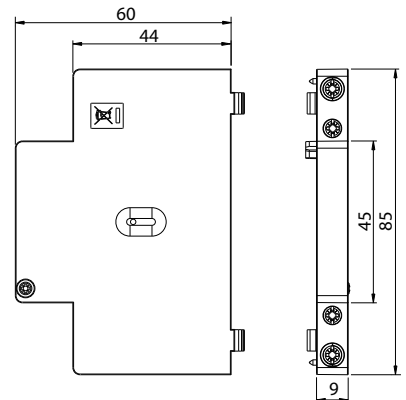
Auxiliary switch PS EFI 16 - 80A

Technical data	
Rated current I_n	6 A (230 V AC), AC 12, 1 A (110 V DC), DC 12
Conditional short-circuit current	1 kA with fuse-link 20 A
Terminals	1-2,5mm ² , max. 0,5Nm
Terminal Screw	M3 (PH1)
Mounting position	any
Standards	EN 62019



Auxiliary switch PS EFI 100 - 125A

Technical data	
Rated current I_n	6 A (230 V AC), AC 12, 1,5 A (110 V DC), DC 12
Conditional short-circuit current	10 kA with fuse-link 6 A
Terminals	0,75-2,5mm ² , max. 0,8Nm
Terminal Screw	M3 (PZ1)
Mounting position	any
Standards	IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 62019, DIN EN 62019 (VDE 0640)



Shunt trip release DA EFI 16-80A

Technical data	
Rated voltage	230V AC
Rated frequency	50/60Hz
Max inrush current	0,8A
Terminals	1-2,5mm ² , max. 0,5Nm
Terminal Screw	M3 (PH1)
Build-in width	9mm
Mounting position	any

