

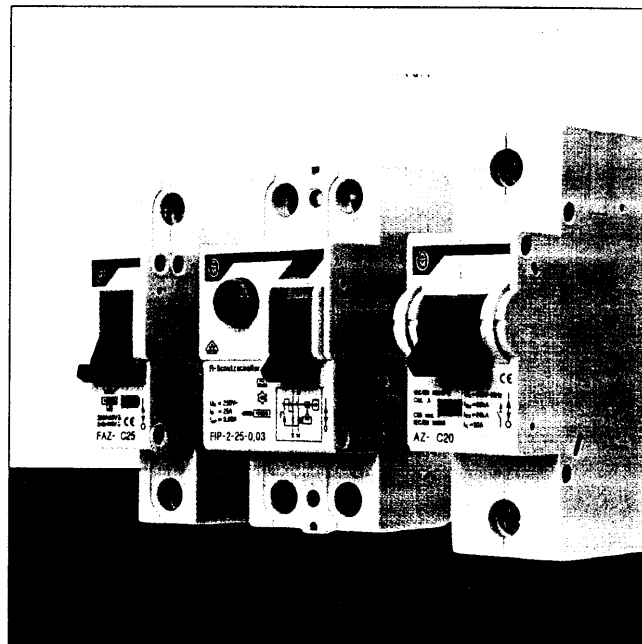
Catalogue Supplement

Miniature Circuit-Breakers

Residual-Current-/Earth Leakage Circuit-Breakers

Modular Installation Devices

Valid from August 1999



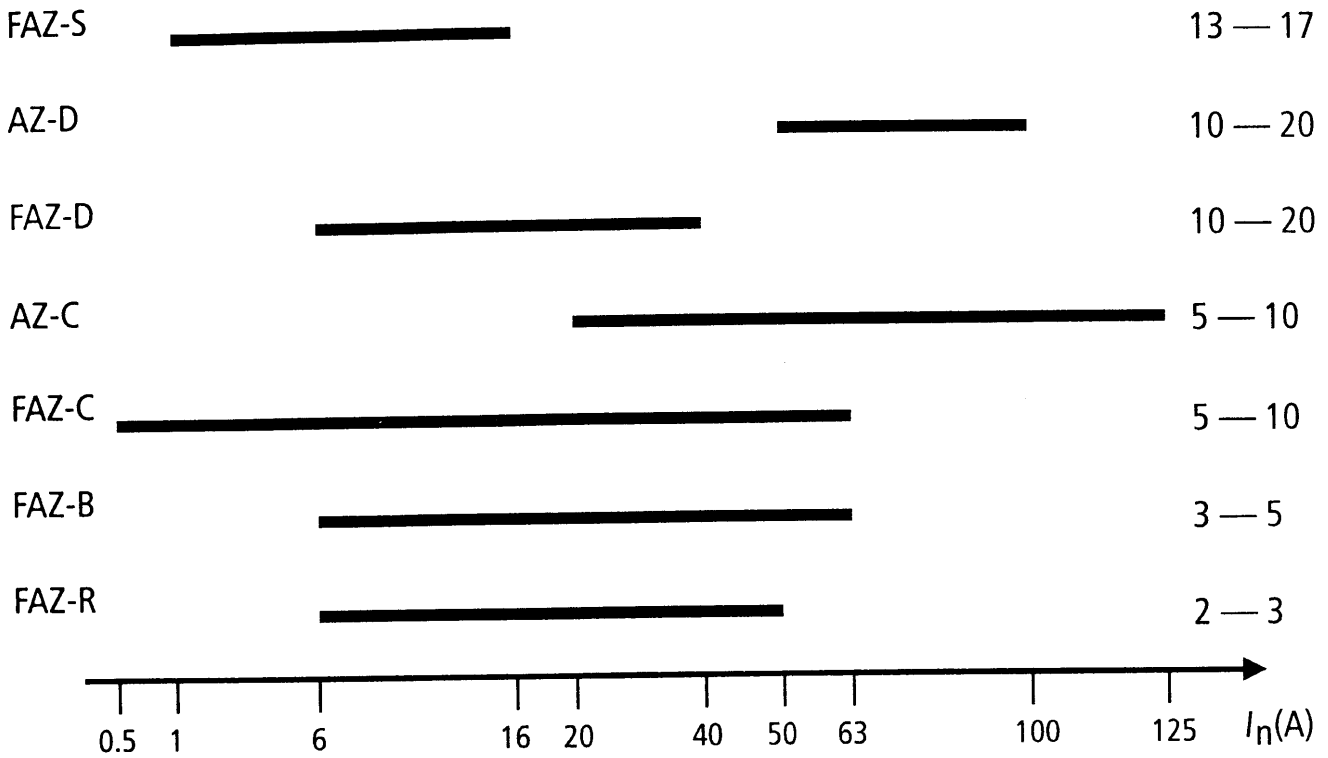
MOELLER



Think future. Switch to green.®

FAZ/AZ Miniature Circuit-Breakers

Response current of short-circuit release
 $n \times I_n$

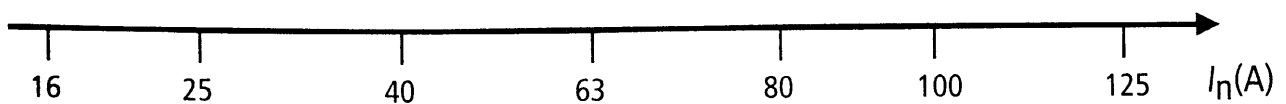


FI... Residual-Current Circuit-Breakers¹⁾

4-pole selective

4-pole

2-pole



¹⁾ = Earth leakage Circuit-Breaker (ELCB)

Miniature Circuit-Breakers, Residual-Current Circuit-Breakers (ELCB), Modular Installation Devices

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¹⁾ = Earth leakage Circuit-Breaker (ELCB)

FAZ Miniature Circuit-Breakers

Switching Capacity 10 kA (IEC/EN 60 898)

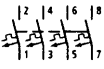

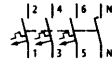
MINIATURE-CIRCUIT-BREAKERS FAZ

Characteristic	1-pole			Std. pack	2-pole With 2 protected poles			3-pole With 3 protected poles				
	Rated current I_n A	Type Article no.	Price See Price List		Type Article no.	Price See Price List	Type Article no.	Price See Price List				
Miniature Circuit-Breakers FAZ												
B Response current of short-circuit release $3 - 5 \times I_n$	4	FAZ-B4HI 214570		12 off	FAZ-2-B4HI 214571		-					
	6	FAZ-B6 211352			FAZ-2-B6 211353		FAZ-3-B6 211354					
	10	FAZ-B10 211358			FAZ-2-B10 211359		FAZ-3-B10 211360					
	13	FAZ-B13 211364			FAZ-2-B13 211365		FAZ-3-B13 211366					
	16	FAZ-B16 211370			FAZ-2-B16 211371		FAZ-3-B16 211372					
	20	FAZ-B20 211376			FAZ-2-B20 211377		FAZ-3-B20 211378					
	25	FAZ-B25 211382			FAZ-2-B25 211383		FAZ-3-B25 211384					
	32	FAZ-B32 211388			FAZ-2-B32 211389		FAZ-3-B32 211390					
	40	FAZ-B40 211394			FAZ-2-B40 211395		FAZ-3-B40 211396					
	50	FAZ-B50 211400			FAZ-2-B50 211401		FAZ-3-B50 211402					
	63	FAZ-B63 211406			FAZ-2-B63 211407		FAZ-3-B63 211408					
	C Response current of short-circuit release $5 - 10 \times I_n$	0.5	FAZ-C0,5 211474			12 off	FAZ-2-C0,5 211475		FAZ-3-C0,5 211476			
		1	FAZ-C1 211480				FAZ-2-C1 211481		FAZ-3-C1 211482			
2		FAZ-C2 211486		FAZ-2-C2 211487			FAZ-3-C2 211488					
3		FAZ-C3 211492		FAZ-2-C3 211493			FAZ-3-C3 211494					
4		FAZ-C4 211498		FAZ-2-C4 211499			FAZ-3-C4 211500					
6		FAZ-C6 211504		FAZ-2-C6 211505			FAZ-3-C6 211506					
10		FAZ-C10 211510		FAZ-2-C10 211511			FAZ-3-C10 211512					
13		FAZ-C13 211516		FAZ-2-C13 211517			FAZ-3-C13 211518					
16		FAZ-C16 211522		FAZ-2-C16 211523			FAZ-3-C16 211524					
20		FAZ-C20 211528		FAZ-2-C20 211529			FAZ-3-C20 211530					
25		FAZ-C25 211534		FAZ-2-C25 211535			FAZ-3-C25 211536					
32		FAZ-C32 211540		FAZ-2-C32 211541			FAZ-3-C32 211542					
40		FAZ-C40 211546		FAZ-2-C40 211547			FAZ-3-C40 211548					
50	FAZ-C50 211552		FAZ-2-C50 211553		FAZ-3-C50 211554							
63	FAZ-C63 211558		FAZ-2-C63 211559		FAZ-3-C63 211560							



FAZ Miniature Circuit-Breakers

Switching Capacity 10 kA (IEC/EN 60 898)

4-pole With 4 protected poles		2-pole With 1 protected pole N switching with pole		4-pole With 3 protected poles N switching with poles	
					
Type	Price	Type	Price	Type	Price
Article no.	See Price List	Article no.	See Price List	Article no.	See Price List
FAZ-4-B6 211355		FAZ-1N-B6 211356		FAZ-3N-B6 211357	
FAZ-4-B10 211361		FAZ-1N-B10 211362		FAZ-3N-B10 211363	
FAZ-4-B13 211367		FAZ-1N-B13 211368		FAZ-3N-B13 211369	
FAZ-4-B16 211373		FAZ-1N-B16 211374		FAZ-3N-B16 211375	
FAZ-4-B20 211379		FAZ-1N-B20 211380		FAZ-3N-B20 211381	
FAZ-4-B25 211385		FAZ-1N-B25 211386		FAZ-3N-B25 211387	
FAZ-4-B32 211391		FAZ-1N-B32 211392		FAZ-3N-B32 211393	
FAZ-4-B40 211397		FAZ-1N-B40 211398		FAZ-3N-B40 211399	
FAZ-4-B50 211403		FAZ-1N-B50 211404		FAZ-3N-B50 211405	
FAZ-4-B63 211409		FAZ-1N-B63 211410		FAZ-3N-B63 211411	
FAZ-4-C0,5 211477		FAZ-1N-C0,5 211478		FAZ-3N-C0,5 211479	
FAZ-4-C1 211483		FAZ-1N-C1 211484		FAZ-3N-C1 211485	
FAZ-4-C2 211489		FAZ-1N-C2 211490		FAZ-3N-C2 211491	
FAZ-4-C3 211495		FAZ-1N-C3 211496		FAZ-3N-C3 211497	
FAZ-4-C4 211501		FAZ-1N-C4 211502		FAZ-3N-C4 211503	
FAZ-4-C6 211507		FAZ-1N-C6 211508		FAZ-3N-C6 211509	
FAZ-4-C10 211513		FAZ-1N-C10 211514		FAZ-3N-C10 211515	
FAZ-4-C13 211519		FAZ-1N-C13 211520		FAZ-3N-C13 211521	
FAZ-4-C16 211525		FAZ-1N-C16 211526		FAZ-3N-C16 211527	
FAZ-4-C20 211531		FAZ-1N-C20 211532		FAZ-3N-C20 211533	
FAZ-4-C25 211537		FAZ-1N-C25 211538		FAZ-3N-C25 211539	
FAZ-4-C32 211543		FAZ-1N-C32 211544		FAZ-3N-C32 211545	
FAZ-4-C40 211549		FAZ-1N-C40 211550		FAZ-3N-C40 211551	
FAZ-4-C50 211555		FAZ-1N-C50 211556		FAZ-3N-C50 211557	
FAZ-4-C63 211561		FAZ-1N-C63 211562		FAZ-3N-C63 211563	

1 off

1 off

Notes

Switching capacity (IEC/EN 60 898) 10 kA

Switching capacity (IEC/EN 60 947-2) 15 kA

Accessories

Page

Auxiliary contacts, voltage releases 12

Mounting accessories 16, 17

Maximum fitting capacity 25

FAZ-B4HI, FAZ-2-B4HI
Special miniature circuit-breaker with drastically reduced let-through energy to prevent contact welding of auxiliary contacts

1-pole
Depth 71 mm
Width 17.5 mm



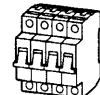
2-pole
Depth 71 mm
Width 35 mm



3-pole
Depth 71 mm
Width 52.5 mm



4-pole
Depth 71 mm
Width 70 mm



FAZ Miniature Circuit-Breakers

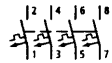
Switching Capacity 10 kA (IEC/EN 60 898)

Characteristic	1-pole				Std. pack	2-pole With 2 protected poles		3-pole With 3 protected poles	
	Rated current I_n A	Type Article no.	Price See Price List			Type Article no.	Price See Price List	Type Article no.	Price See Price List
FAZ miniature circuit-breakers									
D Response current of short-circuit release $10 - 20 \times I_n$ Switching capacity (IEC/EN 60 898) 10 kA Switching capacity (IEC/EN 60 947-2) 15 kA	6	FAZ-D6 214572			12 off	FAZ-2-D6 214573		FAZ-3-D6 214574	
	10	FAZ-D10 214577				FAZ-2-D10 214578		FAZ-3-D10 214579	
	13	FAZ-D13 214582				FAZ-2-D13 214583		FAZ-3-D13 214584	
	16	FAZ-D16 214587				FAZ-2-D16 214588		FAZ-3-D16 214589	
	20	FAZ-D20 214592				FAZ-2-D20 214593		FAZ-3-D20 214594	
	25	FAZ-D25 214597				FAZ-2-D25 214598		FAZ-3-D25 214599	
	32	FAZ-D32 214602				FAZ-2-D32 214603		FAZ-3-D32 214604	
AC miniature circuit-breakers for control circuit protection S Response current of short-circuit release $13 - 17 \times I_n$ Switching capacity (IEC/EN 60 947-2) 4.5 kA	40	FAZ-D40 214607			FAZ-2-D40 214608		FAZ-3-D40 214609		
	1	FAZ-S1 211739			FAZ-2-S1 211740		-		
	2	FAZ-S2 211741			FAZ-2-S2 211742		-		
	3	FAZ-S3 211743			FAZ-2-S3 211744		-		
	4	FAZ-S4 211745			FAZ-2-S4 211746		-		
	6	FAZ-S6 211747			FAZ-2-S6 211748		-		
	10	FAZ-S10 211749			FAZ-2-S10 211750		-		
R Response current of short-circuit release $2 - 3 \times I_n$ Switching capacity (IEC/EN 60 947-2) 6 kA	16	FAZ-S16 211751			FAZ-2-S16 211752		-		
	6	FAZ-R6 211712			FAZ-2-R6 211713		FAZ-3-R6 211714		
	10	FAZ-R10 211715			FAZ-2-R10 211716		FAZ-3-R10 211717		
	13	FAZ-R13 211718			FAZ-2-R13 211719		FAZ-3-R13 211720		
	16	FAZ-R16 211721			FAZ-2-R16 211722		FAZ-3-R16 211723		
	20	FAZ-R20 211724			FAZ-2-R20 211725		FAZ-3-R20 211726		
	25	FAZ-R25 211727			FAZ-2-R25 211728		FAZ-3-R25 211729		
	32	FAZ-R32 211730			FAZ-2-R32 211731		FAZ-3-R32 211732		
	40	FAZ-R40 211733			FAZ-2-R40 211734		FAZ-3-R40 211735		
	50	FAZ-R50 211736			FAZ-2-R50 211737		FAZ-3-R50 211738		

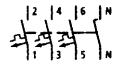
FAZ Miniature Circuit-Breakers

Switching Capacity 10 kA (IEC/EN 60 898)

4-pole
With 4 protected poles



4-pole
With 3 protected poles
N switching with poles



Type	Price	Type	Price	Std. pack
Article no.	See Price List	Article no.	See Price List	

FAZ-4-D6 214575		FAZ-3N-D6 214576		1 off
FAZ-4-D10 214580		FAZ-3N-D10 214581		
FAZ-4-D13 214585		FAZ-3N-D13 214586		
FAZ-4-D16 214590		FAZ-3N-D16 214591		
FAZ-4-D20 214595		FAZ-3N-D20 214596		
FAZ-4-D25 214600		FAZ-3N-D25 214601		
FAZ-4-D32 214605		FAZ-3N-D32 214606		
FAZ-4-D40 214610		FAZ-3N-D40 214611		

Miniature circuit-breakers for DC application

1-pole



2-pole
With 2 protected poles



Type	Price	Type	Price	Std. pack
Article no.	See Price List	Article no.	See Price List	

FAZ-C6-DC 211654		FAZ-2-C6-DC 211655		1 off
FAZ-C10-DC 211656		FAZ-2-C10-DC 211657		
FAZ-C13-DC 211658		FAZ-2-C13-DC 211659		
FAZ-C16-DC 211660		FAZ-2-C16-DC 211661		
FAZ-C20-DC 211662		FAZ-2-C20-DC 211663		
FAZ-C25-DC 211664		FAZ-2-C25-DC 211665		
FAZ-C32-DC 211666		FAZ-2-C32-DC 211667		
FAZ-C40-DC 211668		FAZ-2-C40-DC 211669		
FAZ-C50-DC 211670		FAZ-2-C50-DC 211671		

Accessories

Accessories	Page
Auxiliary contacts, voltage releases	12
Mounting accessories	16, 17
Maximum fitting capacity	25

1-pole
Depth 71 mm
Width 17.5 mm



2-pole
Depth 71 mm
Width 35 mm



3-pole
Depth 71 mm
Width 52.5 mm



4-pole
Depth 71 mm
Width 70 mm



For FAZ-...-DC

C characteristic

Short-circuit release response current
7 – 14 x I_n

Switching capacity
6 kA (L/R = 4 ms)

Rated voltage
250 V DC per pole

Note polarity

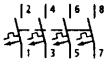
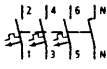
AZ High-Capacity Miniature Circuit-Breakers

Switching Capacity 15 – 25 kA (IEC/EN 60 947-2)

Characteristic	Rated current I_n A	1-pole			2-pole With 2 protected poles			3-pole With 3 protected poles		
		Type Article no.	Price See Price List	Std. pack	Type Article no.	Price See Price List	Std. pack	Type Article no.	Price See Price List	Std. pack
AZ high-capacity miniature circuit-breakers										
C Response current of short-circuit release $5 - 10 \times I_n$	20	AZ-C20 211769		12 off	AZ-2-C20 211770		12 off	AZ-3-C20 211771		1 off
	25	AZ-C25 211774			AZ-2-C25 211775			AZ-3-C25 211776		
	32	AZ-C32 211779			AZ-2-C32 211780			AZ-3-C32 211781		
	40	AZ-C40 211784			AZ-2-C40 211785			AZ-3-C40 211786		
	50	AZ-C50 211789			AZ-2-C50 211790			AZ-3-C50 211791		
	63	AZ-C63 211794			AZ-2-C63 211795			AZ-3-C63 211796		
	80	AZ-C80 211799			AZ-2-C80 211800			AZ-3-C80 211801		
	100	AZ-C100 211804			AZ-2-C100 211805			AZ-3-C100 211806		
	125	AZ-C125 211809		AZ-2-C125 211810		AZ-3-C125 211811				
D Response current of short-circuit release $10 - 20 \times I_n$	50	AZ-D50 211814		12 off	AZ-2-D50 211815		12 off	AZ-3-D50 211816		1 off
	63	AZ-D63 211818			AZ-2-D63 211819			AZ-3-D63 211820		
	80	AZ-D80 211822			AZ-2-D80 211823			AZ-3-D80 211824		
	100	AZ-D100 211826			AZ-2-D100 211827			AZ-3-D100 211828		

AZ High-Capacity Miniature Circuit-Breakers

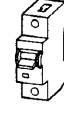
Switching Capacity 15 – 25 kA (IEC/EN 60 947-2)

4-pole With 4 protected poles		4-pole With 3 protected poles N switching with poles	
			
Type	Price	Type	Price
Article no.	See Price List	Article no.	See Price List
			Std. pack

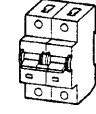
AZ-4-C20 211772		AZ-3N-C20 211773	1 off
AZ-4-C25 211777		AZ-3N-C25 211778	
AZ-4-C32 211782		AZ-3N-C32 211783	
AZ-4-C40 211787		AZ-3N-C40 211788	
AZ-4-C50 211792		AZ-3N-C50 211793	
AZ-4-C63 211797		AZ-3N-C63 211798	
AZ-4-C80 211802		AZ-3N-C80 211803	
AZ-4-C100 211807		AZ-3N-C100 211808	
AZ-4-C125 211812		AZ-3N-C125 211813	
-		AZ-3N-D50 211817	1 off
-		AZ-3N-D63 211821	
-		AZ-3N-D80 211825	
-		AZ-3N-D100 211829	

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Further data	Page
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Mounting accessories	16, 17

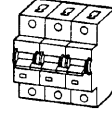
1-pole
Depth 75 mm
Width 27 mm



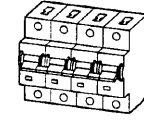
2-pole
Depth 75 mm
Width 54 mm



3-pole
Depth 75 mm
Width 81 mm

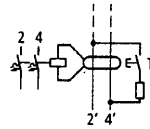


4-pole
Depth 75 mm
Width 108 mm

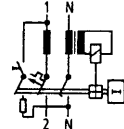


FAZ Miniature Circuit-Breakers with FIM Residual-Current Protection Module, FILS Combined RCD/MCB Devices

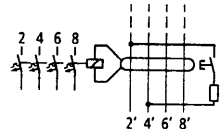
2-pole



2-pole



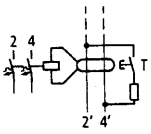
4-pole



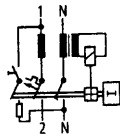
Characteristic	Rated current I_n A	Type Article no.	Price See Price List	Type Article no.	Price See Price List	Type Article no.	Price See Price List	Std. pack
Rated fault current								
$I_{\Delta N} = 30 \text{ mA}$								
B Response current of short-circuit release $3 - 5 \times I_n$	6	-	-	FILS-B6-0,03 211958	-	-	-	1 off
	10	FAZ-2-B10-FIM0,03 211830	-	FILS-B10-0,03 211960	-	FAZ-4-B10-FIM0,03 211832	-	
	16	FAZ-2-B16-FIM0,03 211834	-	FILS-B16-0,03 211962	-	FAZ-4-B16-FIM0,03 211836	-	
	20	FAZ-2-B20-FIM0,03 211838	-	FILS-B20-0,03 211964	-	FAZ-4-B20-FIM0,03 211840	-	
	25	FAZ-2-B25-FIM0,03 211842	-	FILS-B25-0,03 211966	-	FAZ-4-B25-FIM0,03 211844	-	
	32	FAZ-2-B32-FIM0,03 211846	-	FILS-B32-0,03 211968	-	FAZ-4-B32-FIM0,03 211848	-	
	40	FAZ-2-B40-FIM0,03 211850	-	FILS-B40-0,03 211970	-	FAZ-4-B40-FIM0,03 211852	-	
	50	FAZ-2-B50-FIM0,03 211854	-	-	-	FAZ-4-B50-FIM0,03 211856	-	
63	FAZ-2-B63-FIM0,03 211858	-	-	-	FAZ-4-B63-FIM0,03 211860	-		
C Response current of short-circuit release $5 - 10 \times I_n$	6	-	-	FILS-C6-0,03 211972	-	-	-	
	10	FAZ-2-C10-FIM0,03 211894	-	FILS-C10-0,03 211974	-	FAZ-4-C10-FIM0,03 211896	-	
	16	FAZ-2-C16-FIM0,03 211898	-	FILS-C16-0,03 211976	-	FAZ-4-C16-FIM0,03 211900	-	
	20	FAZ-2-C20-FIM0,03 211902	-	FILS-C20-0,03 211978	-	FAZ-4-C20-FIM0,03 211904	-	
	25	FAZ-2-C25-FIM0,03 211906	-	FILS-C25-0,03 211980	-	FAZ-4-C25-FIM0,03 211908	-	
	32	FAZ-2-C32-FIM0,03 211910	-	FILS-C32-0,03 211982	-	FAZ-4-C32-FIM0,03 211912	-	
	40	FAZ-2-C40-FIM0,03 211914	-	FILS-C40-0,03 211984	-	FAZ-4-C40-FIM0,03 211916	-	
	50	FAZ-2-C50-FIM0,03 211918	-	-	-	FAZ-4-C50-FIM0,03 211920	-	
63	FAZ-2-C63-FIM0,03 211922	-	-	-	FAZ-4-C63-FIM0,03 211924	-		
Residual-current protection module								
	40	FIM-2-40-0,03 212023	-	-	-	FIM-4-40-0,03 212025	-	1 off
	63	FIM-2-63-0,03 212027	-	-	-	FIM-4-63-0,03 212029	-	1 off

FAZ Miniature Circuit-Breakers with FIM Residual-Current Protection Module, FILS Combined RCD/MCB Devices

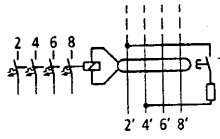
2-pole



2-pole



4-pole



Notes

Pulse-current sensitive, surge-proof up to 250 A



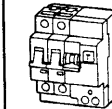
Type Article no.	Price See Price List	Type Article no.	Price See Price List	Type Article no.	Price See Price List	Std. pack
Rated fault current $I_{\Delta N} = 300 \text{ mA}$						
-	-	FILS-B6-0,3 211959	-	-	-	1 off
FAZ-2-B10-FIM0,3 211831	-	FILS-B10-0,3 211961	-	FAZ-4-B10-FIM0,3 211833	-	-
FAZ-2-B16-FIM0,3 211835	-	FILS-B16-0,3 211963	-	FAZ-4-B16-FIM0,3 211837	-	-
FAZ-2-B20-FIM0,3 211839	-	FILS-B20-0,3 211965	-	FAZ-4-B20-FIM0,3 211841	-	-
FAZ-2-B25-FIM0,3 211843	-	FILS-B25-0,3 211967	-	FAZ-4-B25-FIM0,3 211845	-	-
FAZ-2-B32-FIM0,3 211847	-	FILS-B32-0,3 211969	-	FAZ-4-B32-FIM0,3 211849	-	-
FAZ-2-B40-FIM0,3 211851	-	FILS-B40-0,3 211971	-	FAZ-4-B40-FIM0,3 211853	-	-
FAZ-2-B50-FIM0,3 211855	-	-	-	FAZ-4-B50-FIM0,3 211857	-	-
FAZ-2-B63-FIM0,3 211859	-	-	-	FAZ-4-B63-FIM0,3 211861	-	-
-	-	FILS-C6-0,3 211973	-	-	-	-
FAZ-2-C10-FIM0,3 211895	-	FILS-C10-0,3 211975	-	FAZ-4-C10-FIM0,3 211897	-	-
FAZ-2-C16-FIM0,3 211899	-	FILS-C16-0,3 211977	-	FAZ-4-C16-FIM0,3 211901	-	-
FAZ-2-C20-FIM0,3 211903	-	FILS-C20-0,3 211979	-	FAZ-4-C20-FIM0,3 211905	-	-
FAZ-2-C25-FIM0,3 211907	-	FILS-C25-0,3 211981	-	FAZ-4-C25-FIM0,3 211909	-	-
FAZ-2-C32-FIM0,3 211911	-	FILS-C32-0,3 211983	-	FAZ-4-C32-FIM0,3 211913	-	-
FAZ-2-C40-FIM0,3 211915	-	FILS-C40-0,3 211985	-	FAZ-4-C40-FIM0,3 211917	-	-
FAZ-2-C50-FIM0,3 211919	-	-	-	FAZ-4-C50-FIM0,3 211921	-	-
FAZ-2-C63-FIM0,3 211923	-	-	-	FAZ-4-C63-FIM0,3 211925	-	-
FIM-2-40-0,3 212024	-	-	-	FIM-4-40-0,3 212026	-	1 off
FIM-2-63-0,3 212028	-	-	-	FIM-4-63-0,3 212030	-	1 off

Accessories Page

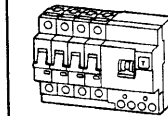
Auxiliary contacts, voltage releases 12

Mounting accessories 16, 17

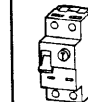
FAZ...-FIM
2-pole
Depth 71 mm
Width 70 mm



4-pole
Depth 71 mm
Width 125 mm

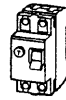
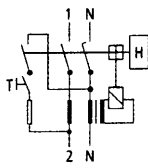


FILS...
2-pole
Depth 71 mm
Width 35 mm

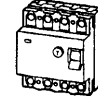
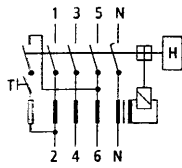


FIP, FIPS Residual-Current Circuit-Breakers or Earth Leakage Circuit-Breakers (ELCB)

2-pole



4-pole



Rated unin-
interrupted
current
 I_u
A

Type
Article no.

Price
See Price
List

Type
Article no.

Price
See Price
List

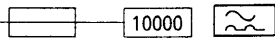
Type
Article no.

Price
See Price
List

Std.
pack

FIP, FIPS Residual-Current Circuit-Breakers or Earth Leakage Circuit-Breakers (ELCB)

Pulse-current sensitive



Surge-proof up to 250 A

selective¹⁾ and surge-proof 5 kA

With rated fault current
 $I_{\Delta N} = 30 \text{ mA}$

16	FIP-2-16-0,03 212004					
25	FIP-2-25-0,03 212005		FIP-4-25-0,03 212011			
40	FIP-2-40-0,03 212008		FIP-4-40-0,03 212015			
63	-		FIP-4-63-0,03 212148			
80	-		FIP-4-80-0,03 212152			
100	-		FIP-4-100-0,03 212155			
125	-		FIP-4-125-0,03 212158			

With rated fault current
 $I_{\Delta N} = 100 \text{ mA}$

25	FIP-2-25-0,1 212006		FIP-4-25-0,1 212012			
40	FIP-2-40-0,1 212009		FIP-4-40-0,1 212016			
63	-		FIP-4-63-0,1 212149		FIPS-4-63-0,1 212019	

With rated fault current
 $I_{\Delta N} = 300 \text{ mA}$

25	FIP-2-25-0,3 212007		FIP-4-25-0,3 212013			
40	FIP-2-40-0,3 212010		FIP-4-40-0,3 212017			
63	-		FIP-4-63-0,3 212150		FIPS-4-63-0,3 212020	
80	-		FIP-4-80-0,3 212153		FIPS-4-80-0,3 212021	
100	-		FIP-4-100-0,3 212156			
125	-		FIP-4-125-0,3 212159			

With rated fault current
 $I_{\Delta N} = 500 \text{ mA}$

25	-		FIP-4-25-0,5 212014			
40	-		FIP-4-40-0,5 212018			
63	-		FIP-4-63-0,5 212151			
80	-		FIP-4-80-0,5 212154			
100	-		FIP-4-100-0,5 212157			
125	-		FIP-4-125-0,5 212160			

1 off

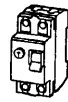
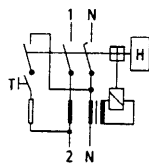
Notes

¹⁾ The rated fault current of the higher-level residual-current circuit-breaker must be greater by at least the factor of 3. The time delay is greater than 40 ms.

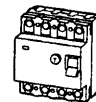
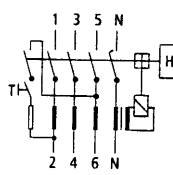
Accessories	Page
Auxiliary contacts	12
Mounting accessories	16, 17

FI, FIS Residual-Current Circuit-Breakers or Earth Leakage Circuit-Breakers (ELCB)

2-pole



4-pole



Rated uninter-
rupted
current
 I_u
A

Type
Article no.

Price
See Price
List

Type
Article no.

Price
See Price
List

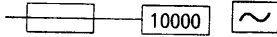
Type
Article no.

Price
See Price
List

Std.
pack

FI, FIS Residual-Current Circuit-Breakers or Earth Leakage Circuit-Breakers (ELCB)

alternative-current sensitive



Surge-proof up to 250 A

selective¹⁾ and surge-proof 5 kA

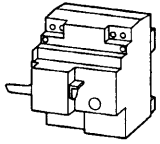
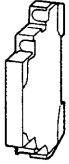

With rated fault current $I_{\Delta N} = 30 \text{ mA}$							
16	FI-2-16-0,03 211986		-				1 off
25	FI-2-25-0,03 211987		FI-4-25-0,03 211993				
40	FI-2-40-0,03 211990		FI-4-40-0,03 211997				
63	FI-2-63-0,03 218940		FI-4-63-0,03 212142				
80	FI-2-80-0,03 218941		FI-4-80-0,03 212146				
With rated fault current $I_{\Delta N} = 100 \text{ mA}$							
25	FI-2-25-0,1 211988		FI-4-25-0,1 211994				
40	FI-2-40-0,1 211991		FI-4-40-0,1 211998				
63	FI-2-63-0,1 218942		FI-4-63-0,1 212143		FIS-4-63-0,1 212001		
80	FI-2-80-0,1 218943		FI-4-80-0,1 218944		-		
With rated fault current $I_{\Delta N} = 300 \text{ mA}$							
25	FI-2-25-0,3 211989		FI-4-25-0,3 211995				
40	FI-2-40-0,3 211992		FI-4-40-0,3 211999				
63	-		FI-4-63-0,3 212144		FIS-4-63-0,3 212002		
80	-		FI-4-80-0,3 212147		FIS-4-80-0,3 212003		
With rated fault current $I_{\Delta N} = 500 \text{ mA}$							
25	-		FI-4-25-0,5 211996				
40	-		FI-4-40-0,5 212000				
63	-		FI-4-63-0,5 212145				

Notes

¹⁾ The rated fault current of the higher-level residual-current circuit-breaker must be greater by at least the factor of 3. The time delay is greater than 40 ms.

Accessories	Page
Auxiliary contacts	12
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FAZ/FIP-X FSM Remote Switching Module, FIP-XPM Test Module

	Rated fault current $I_{\Delta N}$	Type Article no.	Type suffix Article no.	Price See Price List	Std. pack
FAZ/FIP-XFSM remote switching module					
		FAZ/FIP-XFSM 212069	+FAZ/FIP-XFSM 215334		1 off
FIP-XPM test module					
	30 mA	FIP-XPM0,03 212070	+FIP-XPM0,03 215335		1 off
	100 mA	FIP-XPM0,1 212071	+FIP-XPM0,1 215336		
	300 mA	FIP-XPM0,3 212072	+FIP-XPM0,3 215337		
	500 mA	FIP-XPM0,5 212073	+FIP-XPM0,5 215338		

Notes

FAZ/FIP-XFSM Remote Switching Module

- For remote switching and automatic reclosing of FAZ miniature circuit-breakers and FIP(S) residual-current circuit-breakers
- For remote testing of residual-current protection devices in conjunction with the FIP-XPM test module
- Can be mechanically interlocked and sealed.
- LED indication of operational status and alarm status
- Mechanical switching capacity up to FAZ-4-... 63 or up to FIP(S)-4-80

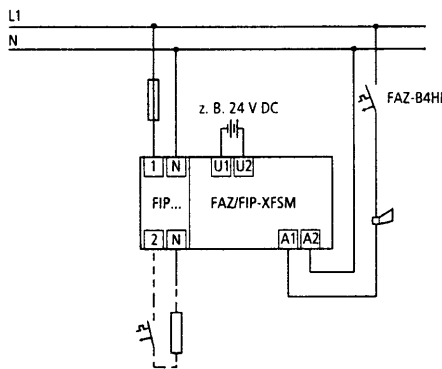
- Rated operational voltage 24 – 240 V AC, 24 – 80 V DC
- Control voltage for remote control 24 – 230 V AC/DC
- Relay output for tripping test 400 V AC
- Terminal capacity 2 × 1.5 mm², 1 × 2.5 mm²
- Mechanical/electrical lifespan 10 000 switching operations
- Own power consumption 5 W

FIP-XPM Test Module

- External test module with defined test impedance corresponding to the rated fault current of the residual-current circuit-breaker
- Enables remote testing according to the Standard
- Suitable for remote tripping of residual-current circuit-breakers

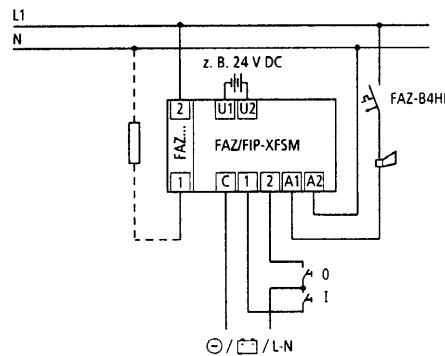
Circuit examples: (Not installation instructions!)

Automatic reset (1 × or 5 ×):
(max. 5 s; 10 s; 1 min; 10 min; 1 h)

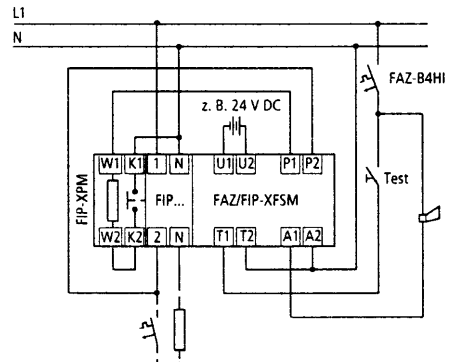


After unintended tripping or a brief disruption, the installation is immediately ready for renewed operation.

REMOTE SWITCHING:



REMOTE TRIPPING TEST:
(Testing possible via alarm or auxiliary contact)



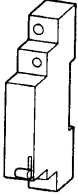
Function control of residual-current circuit-breakers as if by pressing the test button (electrically equivalent).

Modular Installation Devices

Impulse Relays, Light Intensity Switches, Counters, Meters

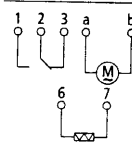
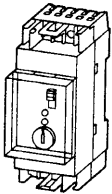
Contact sequence	Rated un-interrupted current I_n A	Actuating voltage 50/60 Hz V AC	Type Article no.	Price See Price List	Std. pack
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Impulse relay



with 1 make contact		16	24	REG-SS10-24 212102	12 off
		16	230	REG-SS10-230 212103	
with 2 make contacts		16	24	REG-SS20-24 212104	12 off
		16	230	REG-SS20-230 212105	

Light intensity switch



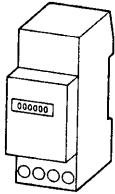
230

REG-DS-ST
212076

1 off

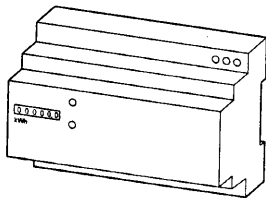
- Rated current 16 A
- Own power consumption about 2 VA
- Switching contact: 1 changeover switch
- Setting ranges: 2 – 100, 2 – 1000, 2 – 10000 lux

Operational hours counter/pulse counter



5 + 1 digits		230	REG-BSZ230 212080	1 off	<ul style="list-style-type: none"> • Terminal capacity: 1 – 2.5 mm², 2 × 1 – 2.5 mm² • no reset facility
		24	REG-BSZ24 212081		
6 digits		230	REG-IZ230 212082		

Three-phase power meter

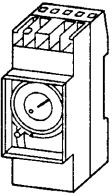
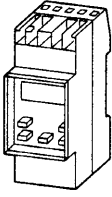
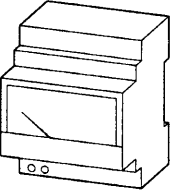
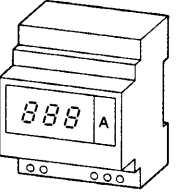


6 digits Transformer connection .../5 A	230/400	REG-KWH400 212084	1 off
6 digits Direct connection .../25 A	230/400	REG-KWH400-25 212085	1 off

- Suitable for uneven loading
- Auxiliary voltage 230 V AC
- no reset facility
- With down-counter block
- Not suitable for certification by electricity supply companies as power consumption measuring device
- Accuracy Class 2


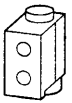

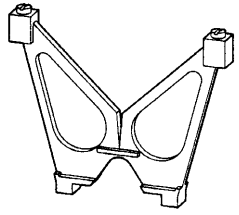
Modular Installation Devices

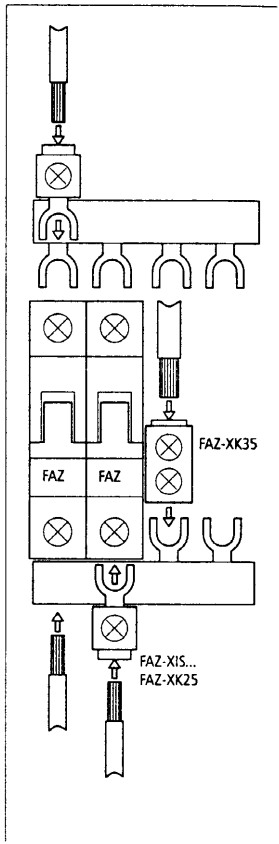
Timers, Meters

		Actuating voltage	Type	Price	Std. pack	
		50/60 Hz V AC	Article no.	See Price List		
Timers, analog 2 space units						
	Synchron/day	230	REG-SUAS-D 212086		1 off	<ul style="list-style-type: none"> Rated current of switching contact 16 A Operational voltage 100 – 240 V Min. switching interval 30 min
	Synchron/week		REG-SUAS-W 212087			
	Quartz/day		REG-SUAQ-D 212088			
	Quarz/week		REG-SUAQ-W 212089			
Timers, digital 2 space units						
	Day, 1 channel	230	REG-SUD-D 212090		1 off	<ul style="list-style-type: none"> Rated current of switching contact 16 A Min. switching interval 1 minute/1 second 20 freely configurable switching blocks ON + OFF With direct manual switching of relay Switching via 1 – 99 s
	Week, 1 channel	230	REG-SUD-W1K 212091			
	Week 2 channels	230	REG-SUD-W2K 212092			
Meters, analog 4 space units						
	Ammeter 0 – 10 A		REG-AMA10 212095		1 off	<ul style="list-style-type: none"> Measuring accuracy Class 1.5 Moving-iron ammeter Terminal capacity Volt meter: 1 – 4 mm² Ammeter: 1 – 6 mm²
	Ammeter 0 – 40 A		REG-AMA40 212096			
	Volt meter 0 – 250 V		REG-VMA250 212097			
	Volt meter 0 – 500 V		REG-VMA500 212098			
Meters, digital 4 space units						
	Ammeter 0 – 20 A		REG-AMD20 212099		1 off	<ul style="list-style-type: none"> Measuring accuracy Class 1 Own power consumption 4.5 VA Auxiliary voltage 115/230 V
	Ammeter with range selection 0 – 999 A/5 A		REG-AMD999 212100			
	Volt meter 0 – 600 V		REG-VMD600 212101			

Mounting Accessories


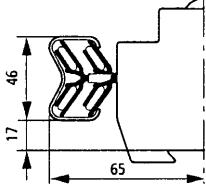
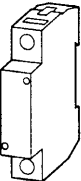
Incoming Terminals, Protective Covers

	Type	Price	Std.
	Article no.	See Price List	pack
Incoming Terminals			
Up to 25 mm ² Touch-proff connection to miniature circuit-breaker with busbar	FAZ-XK25 212116		50 off
			
Up to 35 mm ² Touch-proff connection to FAZ-XIS... busbar	FAZ-XK35 212119		10 off
			
Protective covers			
For shrouding unused terminals on the busbar	FAZ-XBS 212120		10 sets 5 per set
			
Bracket for fixing covers 2 off required per group of MCBs	REG-BB 212106		20 off
			


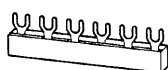
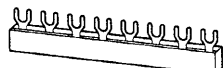


Mounting Accessories

FAZ/FIP-XVS Busbar System

	Rated operational current I_e A	Type Article no.	Price See Price List	Std. pack
FAZ/FIP-XVS busbar system				
<ul style="list-style-type: none"> • Suitable for any residual-current circuit-breaker/auxiliary contact combination • Also suitable for busbar connection between DIL00(A)M contactors, T rotary switches, P1, P3 switch-disconnectors and PKZ motor-protective circuit-breakers. • Two different busbar cross-sections: 50 A 16 mm² Cu and 80 A 25 mm² Cu. • Rated voltage/short-circuit rating 400 V/15 kA 480 V/10 kA 				
	Busbar, 50 A 1 m	50	FAZ/FIP-XVS-VS5 212112	1 off
	Busbar, 80 A 1 m	80	FAZ/FIP-XVS-VS8 212115	1 off
	Extension terminal L1, N	80	FAZ/FIP-XVS-8-1 212113	10 off
	Extension terminal L2, L3	80	FAZ/FIP-XVS-8-2 212114	10 off
	Cover 1 m		FAZ/FIP-XVS-ADP 212107	1 off
	End cap		FAZ/FIP-XVS-EK 212108	10 off
	Feeder block Max. 125 A when used as centre feed		FAZ/FIP-XVS-KL 212109	12 off

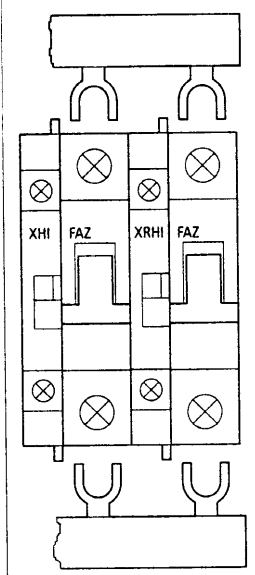
Mounting accessories Commoning Busbars

	Poles	MCBs	Rated operational current	Type Article no.	Price See Price List	Std. pack
	Qty.	Qty.	I_e A			
Commoning busbars						
For miniature circuit-breakers without auxiliary contacts						
Fork connectors for combination box terminals	1	2	85	FAZ-XIS1/2 212121		20 off
	1	6	85	FAZ-XIS1/6 212122		
	1	12	85	FAZ-XIS1/12 212123		
	2 ¹⁾	4	120	FAZ-XIS2/4 212124		10 off
	2 ¹⁾	6	120	FAZ-XIS2/6 212125		
	2 ¹⁾	12	120	FAZ-XIS2/12 212126		
	3	6	120	FAZ-XIS3/6 212127		
	3	12	120	FAZ-XIS3/12 212128		
	4 ¹⁾	8	120	FAZ-XIS4/8 212129		5 off
	4 ¹⁾	12	120	FAZ-XIS4/12 212130		5 off
For miniature circuit-breakers with auxiliary contacts						
	1	2	85	FAZ-XIS1/2-HI 212131		1 off
	1	6	85	FAZ-XIS1/6-HI 212132		
	1	9	85	FAZ-XIS1/9-HI 212133		
	2	4	120	FAZ-XIS2/4-HI 212134		
	2	6	120	FAZ-XIS2/6-HI 212135		
	2	10	120	FAZ-XIS2/10-HI 212136		
	3	6	120	FAZ-XIS3/6-HI 212137		
	3	12	120	FAZ-XIS3/12-HI 212138		
	3 ²⁾	6	120	FAZ-XIS31/6-HI 212139		
	3 ²⁾	8	120	FAZ-XIS31/8-HI 212140		
	3 ²⁾	9	120	FAZ-XIS31/9-HI 212141		

$I_e = 85$ A, terminal capacity 25 mm² at ambient temperature 50 °C

$I_e = 100$ A, terminal capacity 35 mm² at ambient temperature 50 °C

$I_e = 120$ A, terminal capacity 35 mm² at ambient temperature 40 °C



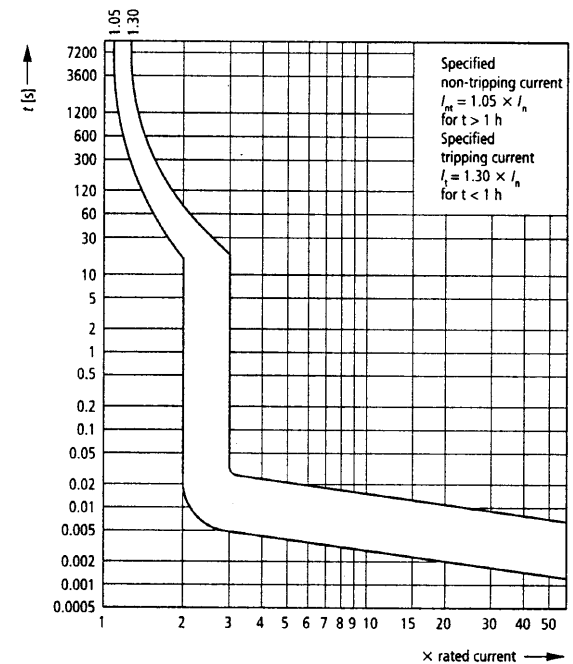
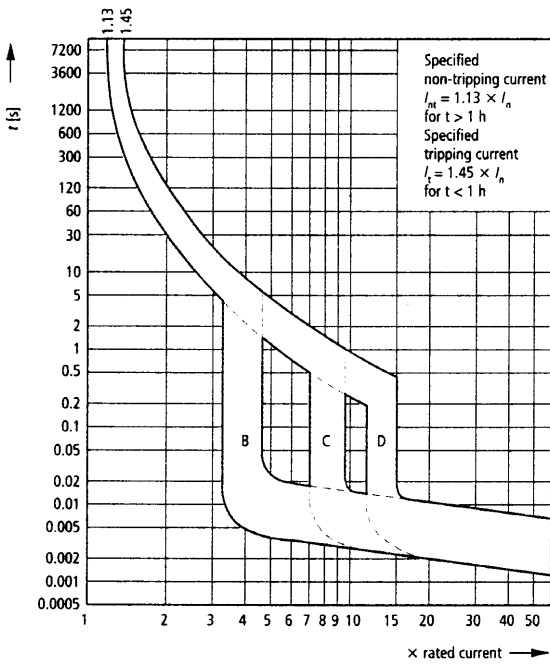
Notes
 1) 2-pole and 4-pole versions can also be used for residual-current circuit-breakers.
 2) 1 auxiliary contact per pole

FAZ Miniature Circuit-Breakers, AZ High-Capacity Miniature Circuit-Breakers

Tripping Characteristics

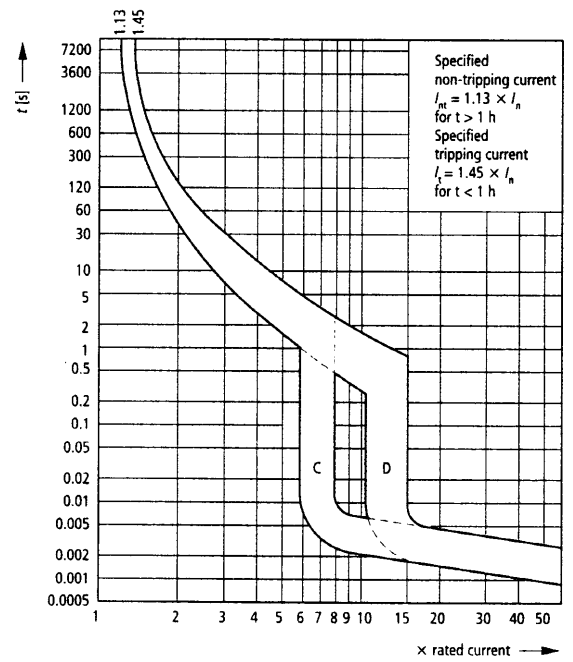
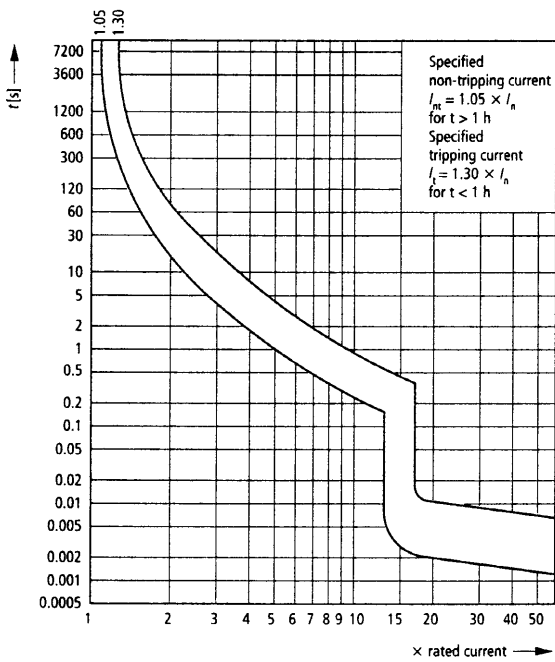
FAZ tripping characteristic at 30 °C: B, C, D to IEC/EN 60 898¹⁾

FAZ tripping characteristic at 30 °C: R to IEC/EN 60 947



FAZ tripping characteristic at 30 °C: S to IEC/EN 60 947

AZ tripping characteristic at 30 °C: C, D to IEC/EN 60 898

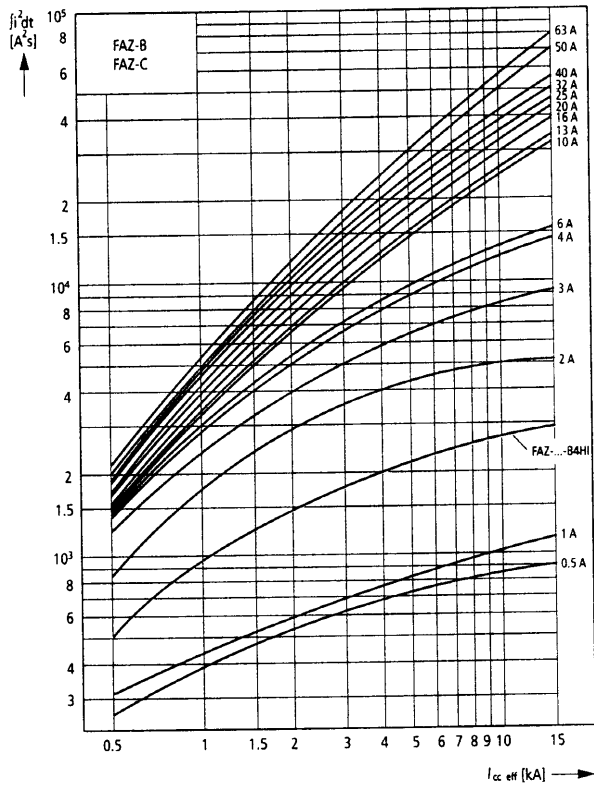


1) The tripping characteristics for MCBs are defined in the IEC/EN 60 898. The tolerances of Moeller MCBs' tripping characteristics have been defined more precisely.

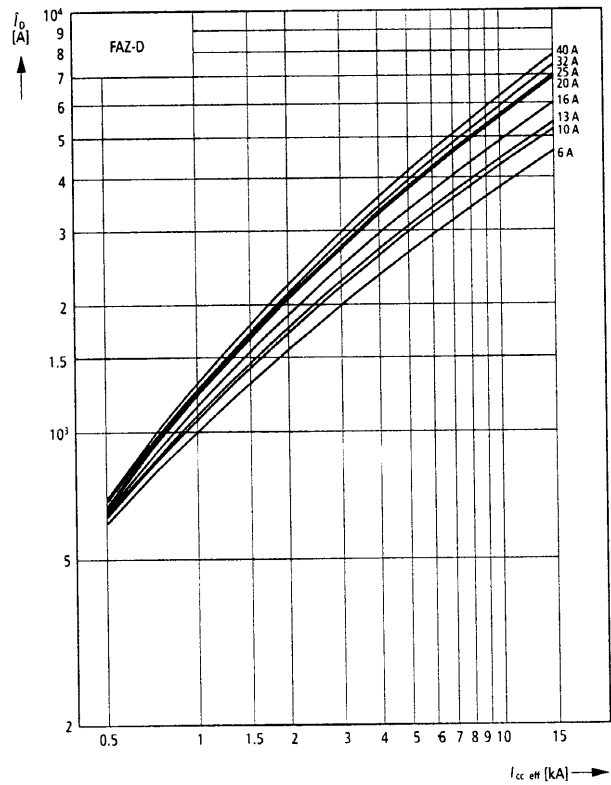
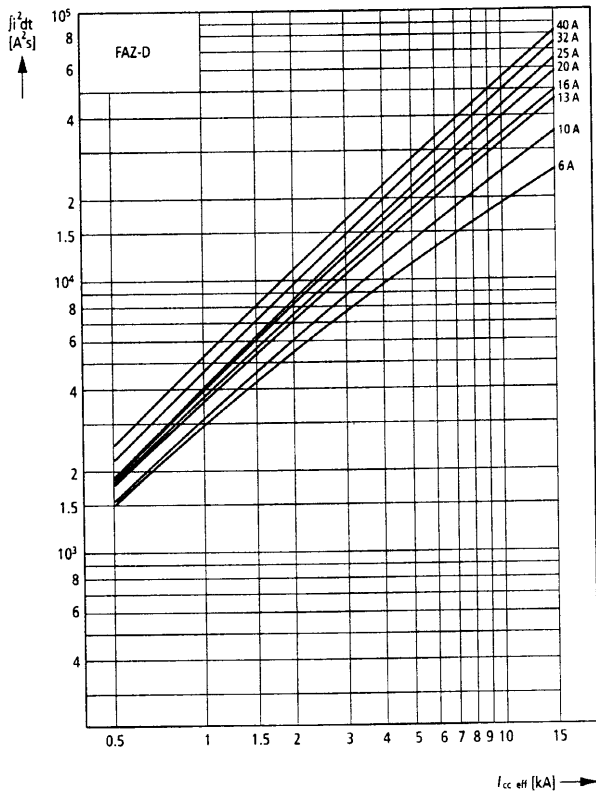
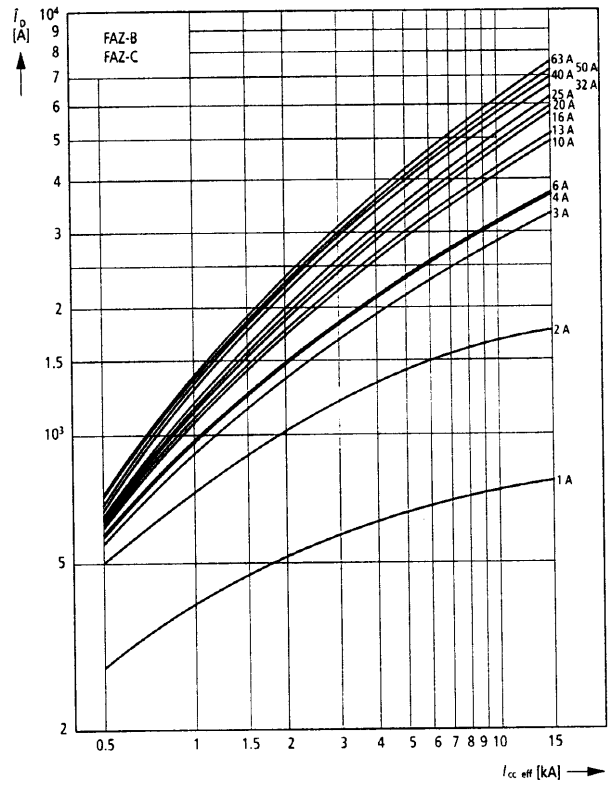
FAZ Miniature Circuit-Breakers Let-Through Characteristics

Let-through energy I^2t /let-through current I_D
Determined in accordance with IEC/EN 60 898

Let-through energy I^2t



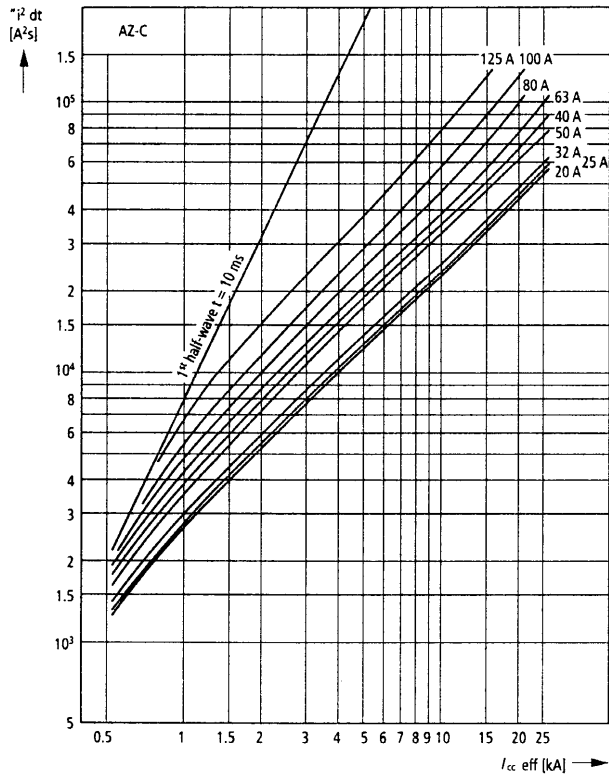
Let-through current I_D



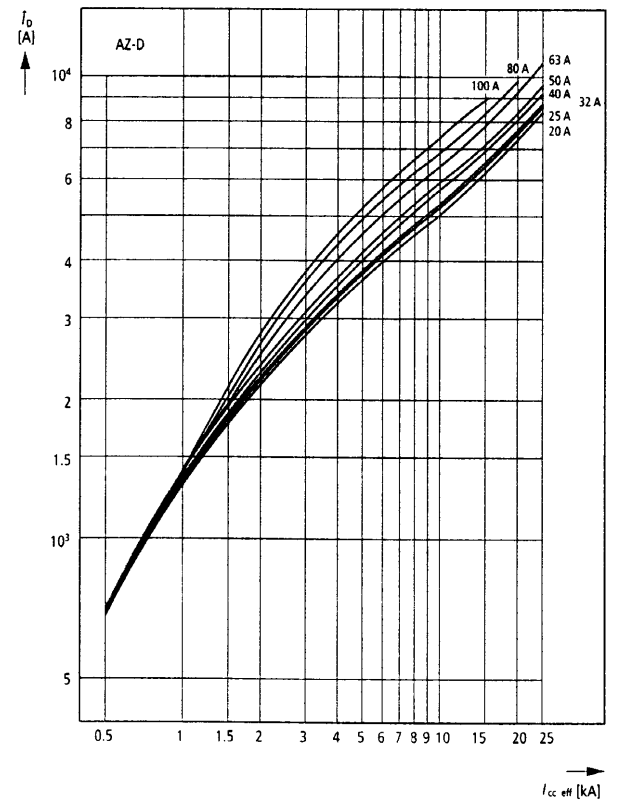
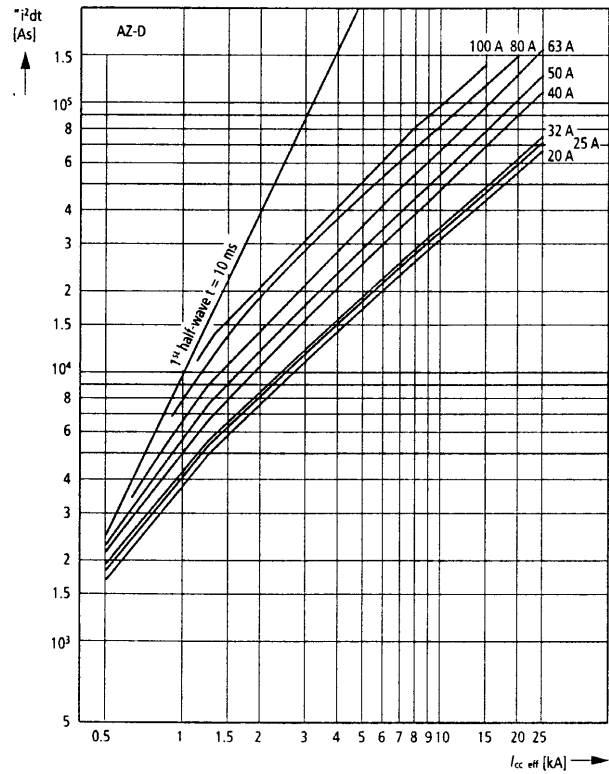
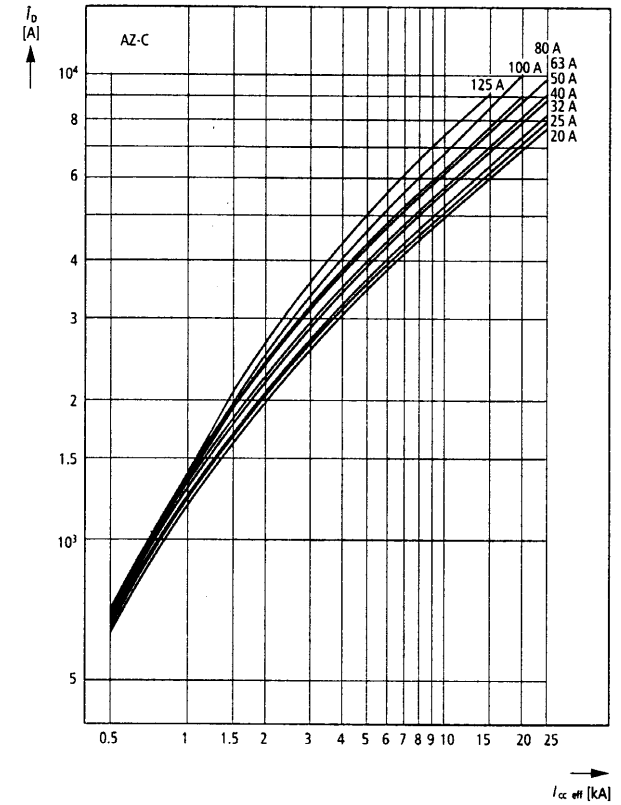
AZ High-Capacity Miniature Circuit-Breakers Let-Through Characteristics

Let-through energy I^2t /let-through current I_D
Determined in accordance with IEC/EN 60 898

Let-through energy I^2t



Let-through current I_D



Miniature Circuit-Breakers

Technical Data

Miniature circuit-breakers				FAZ	AZ
General					
Standards					
B, C, D characteristics				IEC/EN 60 898	
S, R characteristics				IEC/EN 60 947-2	
Ambient temperature	Min./Max.	°C		-5/+40	
Influence of ambient temperature on rated current					
(Ref. 30 °C)		%/K		→ Page 25	-
Mech. shock resistance (shock duration 20 ms)		g		10	20
Mounting position/direction of incoming supply				As required	
Protection against electric shock to IEC 536				Finger- and back-of-hand proof	
Degree of protection (terminals)				IP 20 (IP 00), IP 30 when fitted in distribution board	
Dimensions				→ Page 29	
Weight per pole		kg		0.12	0.24
Terminal capacity					
Solid, stranded		Min./Max.	mm ²	1/25; 2 × 1	1/35; 2 × 1
Tightening torque			Nm	2.4	3.0
Contacts					
Rated current I_n = rated uninterrupted current I_u		A		0.5 – 63	20 – 125
Rated impulse withstand voltage U_{imp}		V		4000	
Rated insulation voltage U_i		V AC		440	
Overvoltage category/pollution degree				III/3	III/2
Rated operational voltage U_e		V AC ³⁾		230/400; 240/415	
DC 1-pole/2-pole		V DC		250/500 ¹⁾	Up to 60
Rated frequency		Hz		50 – 60	
Switching capacity					
Rated short-circuit breaking capacity I_{cn}					
IEC/EN 60 898					
230/400 V AC		B, C, D 0.5 – 50	kA	10/10	-
240/415 V AC		B, C 63	kA	10/8	-
40 V DC ²⁾		B, C, D 0.5 – 50	kA	10	-
		B, C 63	kA	8	-
Rated ultimate short-circuit breaking capacity I_{cu}					
IEC/EN 60 947-2					
230/400 V AC		B, C, D 0.5 – 63	kA/cos φ	15/0.5	25/0.25
		C, D 80/100	kA/cos φ	-	20/0.3
		C 125	kA/cos φ	-	15/0.5
		R 6 – 50	kA/cos φ	6/0.7	-
		S 1 – 16	kA/cos φ	4.5/0.8	-
Up to 250 V DC ¹⁾		1-pole	kA	6	-
Up to 500 V DC ¹⁾		2-pole	kA	6	-
Lifespan, mechanical (1 operation = 2 switching movements)		Operations		≥ 7000	≥ 10000
Selectivity					
Power-limiting class to IEC/EN 60 898 B, C, D characteristics 0.5 – 32 A				3	
Back-up protection					
Using LV h.b.c. fuses 200/100 A gL			kA	-/100	100/100

Notes

1) FAZ-C...-DC

2) FAZ...B(C, D)...

3) AC version max. 40 V DC, only B, C, D characteristics

Miniature Circuit-Breakers

Technical Data

Residual-current protection module			FIM-40	FIM-63	FILS
General					
Standards			IEC/EN 61 009		
Ambient temperature	Min./Max.	°C	-5/+40		
Mounting position/direction of incoming supply			As required		
Degree of protection (terminals)			IP 20 (IP 00), IP 30 when fitted in distribution board		
Dimensions			→ Page 29		
Weights FAZ-...FIM/FILS	2-pole	kg	0.48		0.22
	4-pole	kg	0.82		-
Terminal capacity					
Solid	Min./Max.	mm ²	1/25; 2 × 1		
Tightening torque			Nm	2.4	3.0
					2.4
Contacts					
Rated uninterrupted current I_u		A	40	63	6 – 40
Rated impulse withstand voltage U_{imp}		V	4000		
Rated operational voltage U_e		V AC	240/415		230
Rated frequency		Hz	50 – 60		
Rated insulation voltage U_i		V AC	440		
Heat dissipation 2-pole/4-pole		VA	10.2/20.4		→ Page 24, 25
Switching capacity					
Rated short-circuit breaking capacity I_{cn}					
	IEC/EN 60 898	B, C 6 – 40	kA	-	10
Releases					
Rated fault current $I_{\Delta n}$		A	0.03/0.3		
Tripping time t_a					
	at $I_{\Delta} = I_{\Delta n}$	ms	≦ 200		
	at $I_{\Delta} = 5 \times I_{\Delta n}$	ms	≦ 40		
Peak withstand current (lightning current 8/20)		A	250		
Working voltage range of test device (-15%/+10%)		V AC	230 – 415		184 – 253
Lifespan, mechanical and electrical			See FAZ		See FAZ/FIP

Miniature Circuit-Breakers

Technical Data

Auxiliary contacts, voltage releases			FAZ/ FIP-XHI 11 FAZ/ FIP-XRHI002	FAZ-XUA	FAZ-XAA	AZ-XHI 11	AZ-XAA	
General								
Degree of protection (terminals)			IP 20 (IP 00), IP 30 when fitted in distribution board					
Dimensions			→ Page 29					
Weights			kg	0.045	0.155	0.155	0.04	0.095
Terminal capacity								
Solid/stranded		Min./Max.	mm ²	0.5/4; 2 × 0.5/2.5	0.5/4; 2 × 0.5/2.5	1/25; 2 × 1/4	1/25; 2 × 1/4	
Tightening torque			Nm	0.8	0.8	2.4	2.4	2.4
Auxiliary contacts								
Rated insulation voltage U_i			V AC	440(XHI)/ 250(XRHI)	440	440	440	440
Rated operational current I_e XHI/XRHI								
AC-12		250 V	A	-/2	-	-	-	-
AC-13		250 V	A	6/-	-	-	6	-
		440 V	A	2/-	-	-	2	-
AC-15		230 V	A	-/1	-	-	-	-
DC-12		110 V	A	-/0.5	-	-	-	-
DC-13		60 V	A	4/-	-	-	4	-
		110 V	A	2/-	-	-	2	-
		230 V	A	0.5/-	-	-	0.5	-
Safe isolation to VDE 0106 Part 101 and 101 A1 between auxiliary contacts and main contacts			V AC	440	-	-	440	-
Minimum pulse duration			ms	-	>15	-	-	>15
Minimum command time			ms	-	-	≤100 ms	-	-
Max. short-circuit protective device								
Fuseless		Type		FAZ-B4HI			FAZ-B4HI	
Fuse		gL, gG	A	4	Inherently short-circuit proof	Inherently short-circuit proof	4	Inherently short-circuit proof
Lifespan, mechanical			Operations	≥6000	>10000	>4000	≥6000	>4000
Coil								
Rated operational voltage U_e			Type: FAZ-XUA	V AC	-	115/230/400	-	-
			Type 1: (F)AZ-XAA	V AC	-	-	110 - 435	-
				V DC	-	-	110 - 230	-
			Type 2: (F)AZ-XAA	V DC	-	-	12 - 110	-
				V AC	-	-	24 - 60	-
Undervoltage releases								
Drop-out voltage			× U_s	-	0.7 - 0.35	-	-	-
Inrush current		Pick-up	A (AC/DC)	-	3.6/44	-	-	-
Shunt release								
Operating range			× U_s	-	-	0.7 - 1.1	-	-
Inrush current		Pick-up	A (AC)	-	-	25/12 ms	-	38/2.1 ms
			A (DC)	-	-	15/3 ms	-	34/2 ms

Notes

Miniature Circuit-Breakers

Technical Data

Heat dissipation		Influence of the ambient temperature on the thermal tripping characteristic							
FAZ B, C, D		Rated heat dissipation/pole	Reference temperature	Ambient temperature					
I_n [A]	[W]		30 °C	35 °C	40 °C	45 °C	50 °C	55 °C	60 °C
0.5	1.2		0.5	0.5	0.5	0.5	0.5	0.5	0.4
1	1.3		1	1.0	1.0	0.9	0.9	0.9	0.9
2	1.4		2	2.0	1.9	1.9	1.8	1.8	1.8
3	1.2		3	2.9	2.9	2.8	2.8	2.7	2.6
4	1.2		4	3.9	3.8	3.8	3.7	3.6	3.5
6	1.8		6	5.9	5.8	5.6	5.5	5.4	5.3
10	2.1		10	9.8	9.6	9.4	9.2	9.0	8.8
13	2.3		13	12.7	12.5	12.2	12.0	11.7	11.4
16	2.0		16	15.7	15.4	15.0	14.7	14.4	14.1
20	2.9		20	19.6	19.2	18.8	18.4	18.0	17.6
25	3.1		25	24.5	24.0	23.5	23.0	22.5	22.0
32	3.1		32	31.4	30.7	30.1	29.4	28.8	28.2
40	4.2		40	39.2	38.4	37.6	36.8	36.0	35.2
50	4.6		50	49.0	48.0	47.0	46.0	45.0	44.0
63	5.3		63	61.7	60.5	59.2	58.0	56.7	55.4

Example:

To maintain the specified tripping times at an ambient temperature of 60 °C, with rated current 10 A a miniature circuit-breaker suitable for 13 A must be used.

Influence of system frequency on response current of short-circuit release

Correction factor k, for calculation of the tripping value of a miniature circuit-breaker when used in a system with a frequency which deviates from 50/60 Hz.

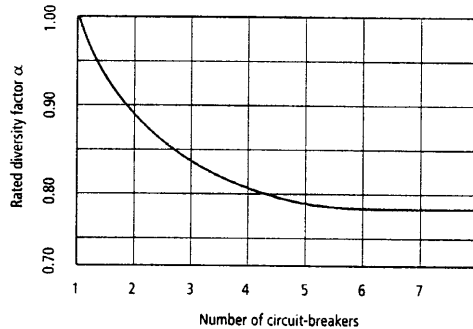
The response values of the overload release are not dependent on the frequency.

Example:

Frequency Hz	Factor k	Type	Frequency	Instantaneous tripping
16 ² / ₃ - 60	1	FAZ-B10	50 Hz	30 - 50 A
100 Hz	1.1		400 Hz	45 - 75 A
200 Hz	1.2			
400 Hz	1.5			

Load carrying capacity of FAZ miniature circuit-breakers when mounted side-by-side

Rated diversity factor α where miniature circuit-breakers mounted side-by-side influence one another thermally, at rated load.

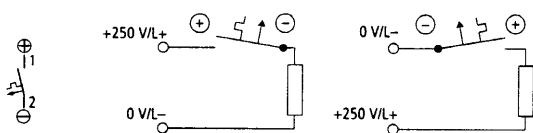


DC application: FAZ-...-C...-DC

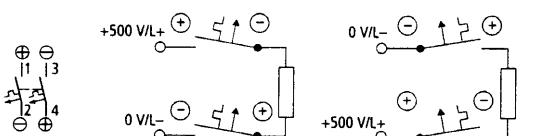
Circuit design notes:

Note polarity !

1-pole



2-pole



Max. options of combining miniature circuit-breakers and residual-current circuit-breakers with accessories

Combination options: FAZ, FAZ-...-FIM, FILS

Left	FAZ	FAZ-2(4)-...FIM...	FILS	right
FAZ/FIP-XHI11	FAZ/FIP-XRHI002	FAZ/XAA	FAZ/XUA	FAZ/FIP-XFSM
●	-	●	-	●
-	●	●	-	●
-	-	-	●	-
●	-	●	-	-
-	●	●	-	-
-	-	-	●	-
-	●	-	-	-

Combination options: FI, FIS, FIP, FIPS \leq 80 A

Left	FIP(S) \leq 80 A	right
FAZ/FIP-XHI11	FAZ/XPM	FAZ/FIP-XRHI002
●	-	●
-	●	●

Combination options: AZ

Left	AZ	right
AZ-XAA		AZ-XHI11
●	●	●

● Can be combined

- Can not be combined

FIP(S) Residual-Current Circuit-Breakers or Earth Leakage Circuit-Breakers (ELCB)

Technical Data

Residual-current circuit-breakers			4-pole FIP(S), FI(S)				FIP		2-pole FIP, FI		
Rated operational current [A]	A		25	40	63	80	100	125	16	25	40
General											
Standards			IEC/EN 61 008, VDE 0664 Part 1 (RCCB), BS 4293								
Ambient temperature	Min./Max.	°C	-25/+40						-25/+40		
Mechanical shock resistance (shock duration 20 ms)		g	20						20		
Mounting position/direction of incoming supply			As required						As required		
Degree of protection (terminals)			IP 40 (IP 00), IP 40 when fitted in distribution board						IP 40 (IP 00)		
Dimensions			→ Page 29						→ Page 29		
Weight		kg	0.32				0.975		0.22		
Terminal capacity											
	Solid, stranded	Min./Max.	mm ²	1/25			2.5/35		1/25		
Tightening torque			Nm	2.4	2.4	3	3	4	3		
Contacts											
Rated uninterrupted current I_u		A	25	40	63	80	100	125	16	25	40
Rated operational voltage U_e		V AC	230/400						230		
	Max. operational voltage	V AC	253/440						253		
Rated frequency		Hz	50 – 60								
Max. short-circuit protective device		A gG	63	63	63	80	125	125	63	63	63
	Short-circuit rating	kA	10	10	10	10	10	10	10	10	10
Current heat losses, all contacts											
	At I_n and $I_{\Delta n} = 0.3$ A	W	6	9	20	12	17	27	2	4	10
	At I_n and $I_{\Delta n} = 0.1$ A	W	4	6	13	–	–	–	–	4	7
	At I_n and $I_{\Delta n} = 0.03$ A and 0.5 A	W	2	5	11	12	17	27	–	2	5
Releases											
Rated fault current $I_{\Delta n}$		A	0.03/ 0.1/ 0.3/ 0.5						0.03/ 0.1/ 0.3		
Tripping time t_a											
	At $I_{\Delta} = I_{\Delta n}$	ms	200						200		
	At $I_{\Delta} = 5 \times I_{\Delta n}$	ms	≤ 40						≤ 40		
Peak withstand current (lightning current 8/20)	FIP	A	250						250		
	FIPS	A	5000						–		
Working voltage range of test device ¹⁾		V AC	184 – 440				100 – 250		184 – 253		
Lifespan, mechanical	Operations		≧ 10000				≧ 5000		≧ 10000		
Lifespan, electrical	At I_n , U_n and $\cos \varphi = 0.9$	Operations	≧ 2000				≧ 5000		≧ 2000		

Notes

¹⁾ With FIP-4-25(40)(63)(80) fit test device between 2 phases, otherwise between phase and neutral conductor

REG-SS Impulse Relay

Technical Data

Impulse relays				REG-SS 10	REG-SS 20
General					
Standards				IEC/EN 60 669-1	
Degree of protection (terminals)				IP 20 (IP 00), IP 30 when fitted in distribution board	
Ambient temperature			Min./Max.	°C	-10/+50
Mechanical shock resistance (shock duration 20 ms)				g	20
Mounting position				As required	
Dimensions				→ Page 31	
Weight				kg	0.14 0.16
Terminal capacity					
Coil connections		Solid	Min./Max.	mm ²	1/6
		Flexible with ferrule ¹⁾	Min./Max.	mm ²	0.5/4
Contacts		Solid	Min./Max.	mm ²	1.5/10
		Flexible with ferrule ¹⁾	Min./Max.	mm ²	1/6
Tightening torque		Coil A ₁ – A ₂		Nm	1
		Contacts		Nm	1.5
Load circuit					
Rated operational voltage U_e (switching contact)				V AC	250
Rated insulation voltage U_i				V AC	500
Rated operational current I_e (switching contact)				A	16
Ratings					
Filament bulbs				W	2200
Fluorescent lamps (comp. max. 45 µF)				W	400
Total heat dissipation per contact at $I_e = 16$ A				W	1.3
Control circuit					
Rated operational voltage U_e				V AC	24 230 24 230
Operating range					$0.85 - 1.1 \times U_e$
Rated frequency				Hz	50 – 60
Power consumption		Pull-in		VA	16
Pulse duration			Min./Max.	s	0.1/3600
Lifespan, mechanical			Operations		500 000
Lifespan, electrical			16 A/AC-1	Operations	100 000

Notes

¹⁾ Ferrule to DIN 46 228

Switchgear for North America

FAZ Miniature Circuit-Breakers

UL 1077/CSA 22.2 No. 235

Supplementary Protector

FAZ miniature circuit-breakers with appropriate upstream protective devices are approved as "Supplementary Protectors" to UL 1077.

FAZ; B characteristic; 6 – 40 A
FAZ; C characteristic; 2 – 40 A

Switching capacity

In conjunction with an upstream protective device
(100 A fuse or max. $4 \times I_n$ MCB)

1-pole

5 kA – 277 V AC

Multi-pole

5 kA – 277/480 V AC

Tripping current

155 % I_n at 30 °C**Accessories**Auxiliary contacts
FAZ-XHI/FAZ-XRHI

General Use

230 V AC

– /2 A

250 V AC

6 A/ –

440 V AC

2 A/ –

110 V DC

2 A/0.5 A

230 V DC

0.5 A/ –

FAZ-XAA voltage release

General Use

Rated operational voltage

FAZ-XAA(110-415 V AC)

V AC

110 – 415

V DC

110 – 230

XAA(12-110 V AC)

V AC

12 – 110

V DC

12 – 60

FAZ-XUA voltage release

Rated operational voltage

V AC

230

Terminal capacitySupplementary Protector
FAZ-B
FAZ-C
FAZ-XAA

Cables

Cu 75 °C, min. AWG 18, max. AWG 8

Torque

Nm

2.4

Accessories

Cables

Cu 75 °C, min. AWG 18, max. AWG 14

Torque

FAZ-XHI

Nm

0.8

FAZ-XRHI

Nm

0.8

FAZ-XUA

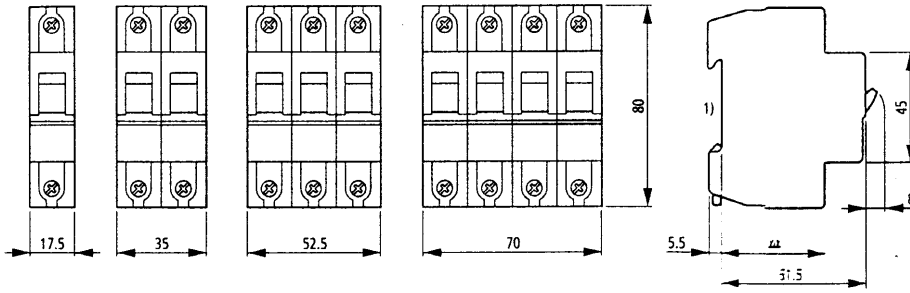
Nm

0.8

Miniature Circuit-Breakers Dimensions

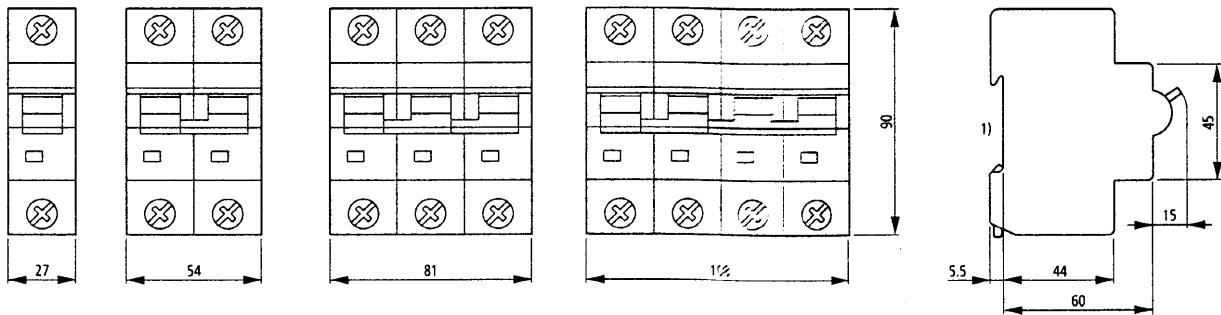
Miniature circuit-breakers

FAZ



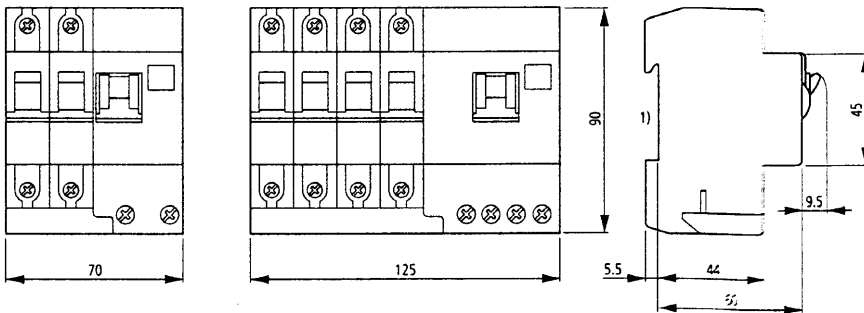
High-capacity miniature circuit-breakers

AZ



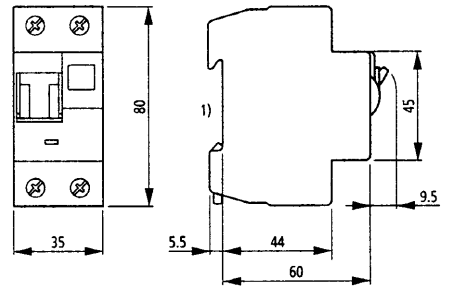
Miniature circuit-breakers with residual-current protection module

FAZ... - FIM...



Combined RCD/MCB device

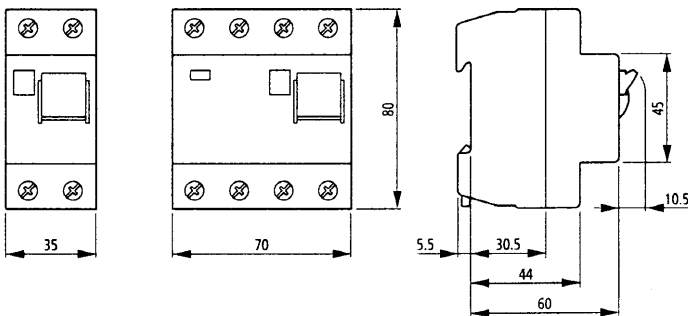
FILS



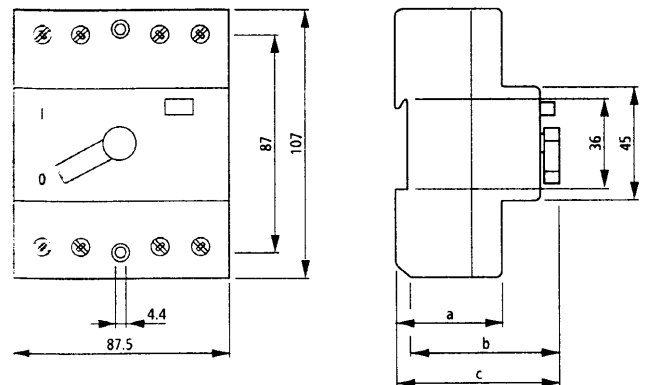
Residual-current circuit-breakers

FIP, FI

FIP, FIPS \leq 80 A
FI, FIS \leq 80 A



FIP \geq 100 A

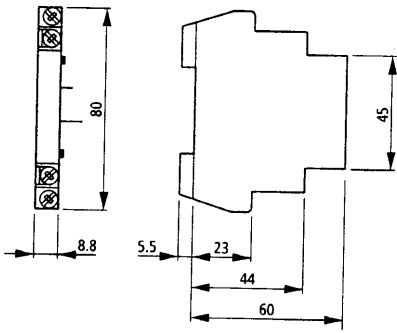


Type	a	b	c
FIP-4-100-0,3 (0,5)	49	68	73
FIP-4-125-... and FIP-4-100-0,03	60	80	85

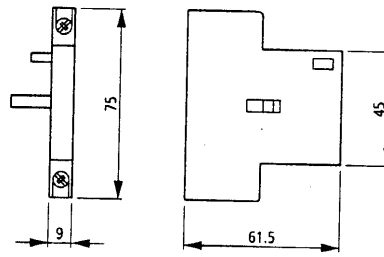
Miniature Circuit-Breakers Dimensions

Standard auxiliary contacts

FAZ/FIP-XHI 11

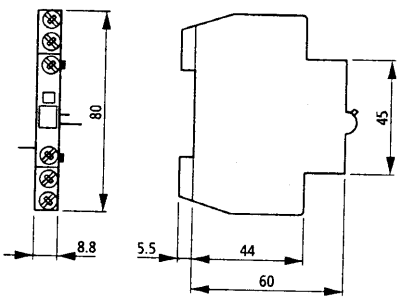


FIP 100/125-XHI 11



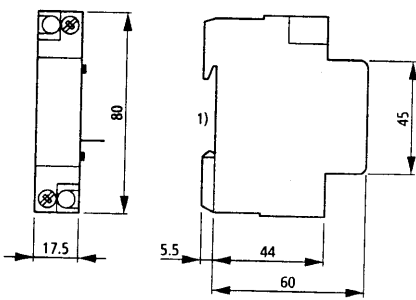
Trip-indicating auxiliary contacts

FAZ/FIP-XRH1002



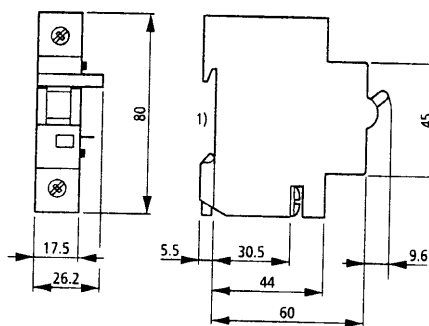
Undervoltage releases

FAZ-XUA



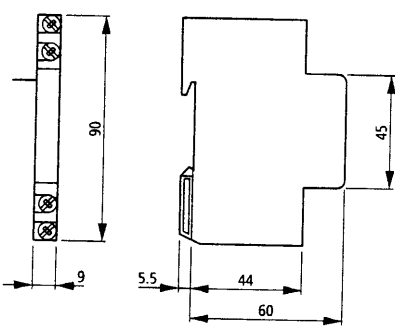
Shunt release

FAZ-XAA



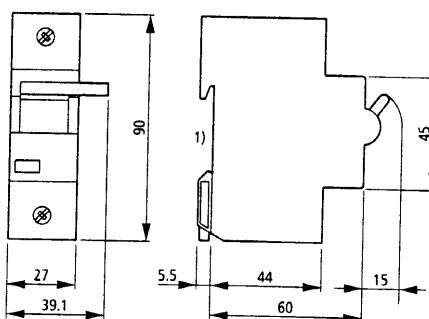
Standard auxiliary contacts

AZ-XHI 11



Shunt release

AZ-XAA



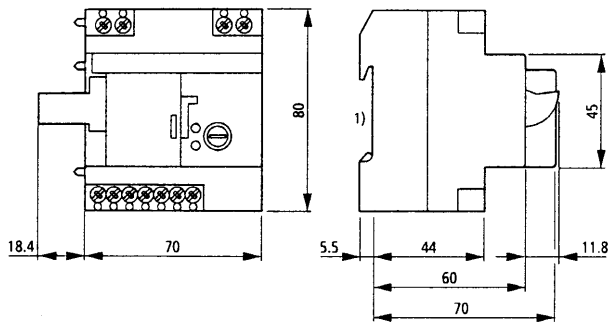
Notes

1) Top-hat rail EN 50022

Miniature Circuit-Breakers Dimensions

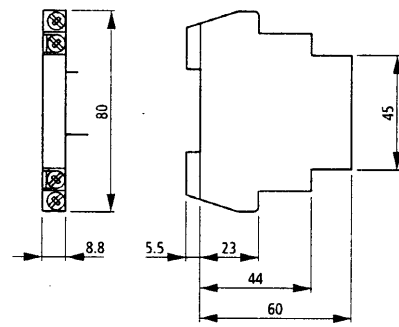
Remote switching module

FAZ/FIP-XFSM



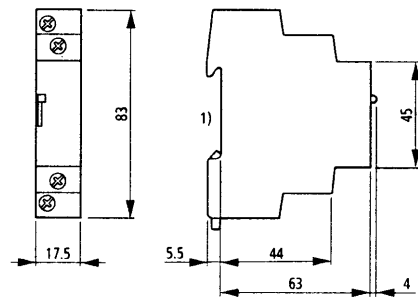
Test module

FIP-XPM



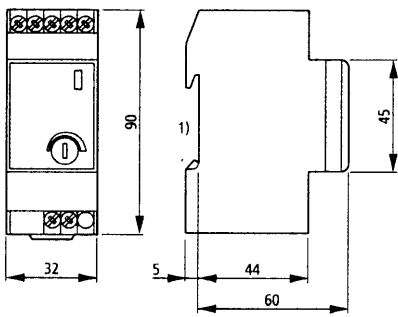
Impulse relay

REG-SS



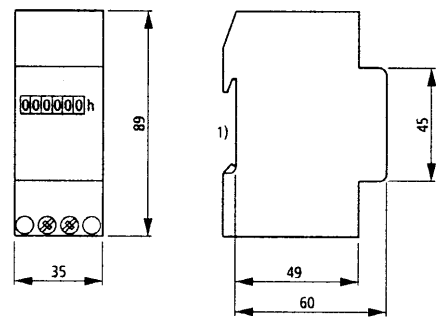
Light intensity switch

REG-DS-ST



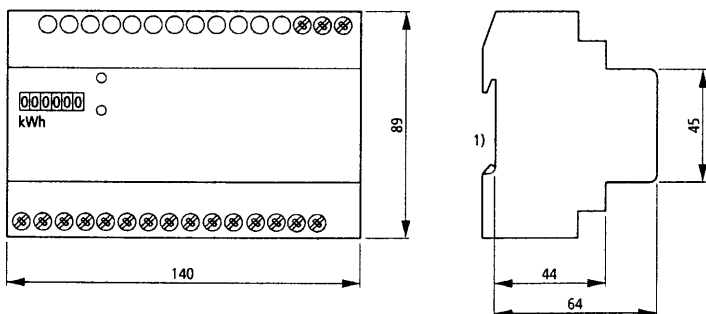
Operational hours counter/pulse counter

REG-BSZ(IZ)



Three-phase power meter

REG-KWH 400



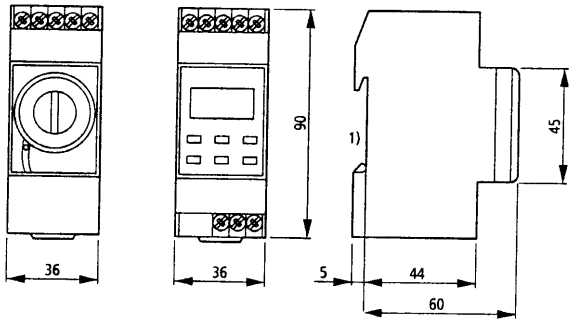
Notes

1) Top-hat rail EN 50022

Miniature Circuit-Breakers Dimensions

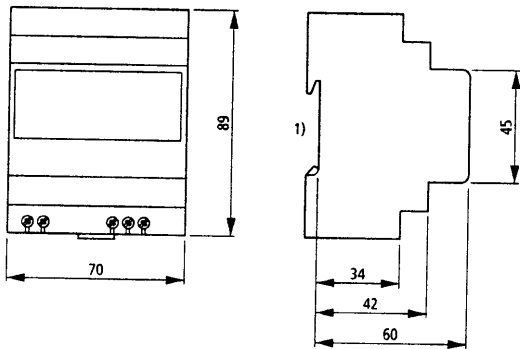
Timers, analog, digital

REG-SUA...(SUD)



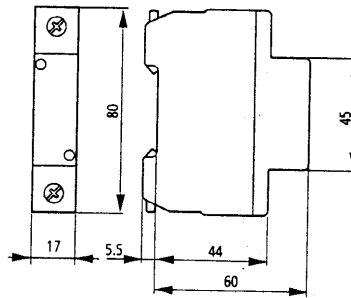
Meters, analog, digital

REG-AMA(VMA, AMD, VMD)



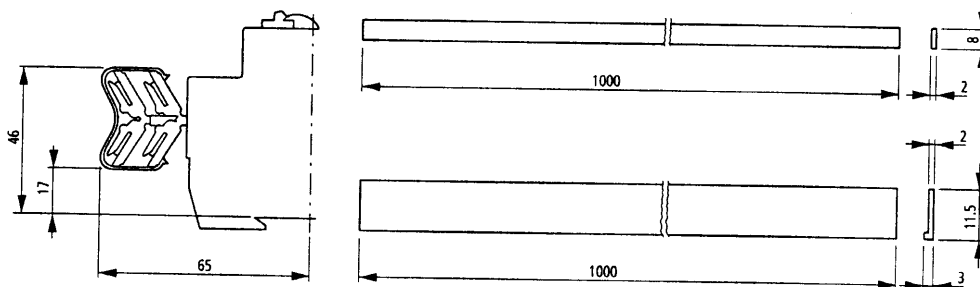
Feeder block for FAZ/FIP-XVS busbar system

FAZ/FIP-XVS-KL



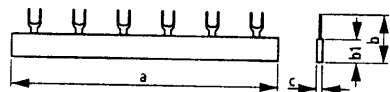
Busbar system

FAZ/FIP-XVS



Commoning busbar for miniature circuit-breakers

FAZ-XIS



Commoning busbar for miniature circuit-breakers without auxiliary contacts

Type	a	b	b1	c
FAZ-XIS1/2	30	29	14	3,5
FAZ-XIS1/6	104	29	14	3,5
FAZ-XIS1/12	207	29	14	3,5
FAZ-XIS2/4	65	29	14	6,3
FAZ-XIS2/6	104	29	14	6,3
FAZ-XIS2/12	207	29	14	6,3
FAZ-XIS3/6	104	29	14	9
FAZ-XIS3/12	206	29	14	9
FAZ-XIS4/8	141	29	14	11,8
FAZ-XIS4/12	207	29	14	11,8

Commoning busbar for miniature circuit-breakers with auxiliary contacts

Type	a	b	b1	c
FAZ-XIS1/2-HI	53	29	14	3,5
FAZ-XIS1/6-HI	155	29	14	3,5
FAZ-XIS1/9-HI	228	29	14	3,5
FAZ-XIS2/4-HI	73	29	14	6,3
FAZ-XIS2/6-HI	120	29	14	6,3
FAZ-XIS2/10-HI	207	29	14	6,3
FAZ-XIS3/6-HI	120	29	14	10,7
FAZ-XIS3/12-HI	236	29	14	10,7
FAZ-XIS31/6-HI	155	29	14	10,7
FAZ-XIS31/8-HI	207	29	14	10,7
FAZ-XIS31/9-HI	236	29	14	10,7

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TLC-Fax: 8843816

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