

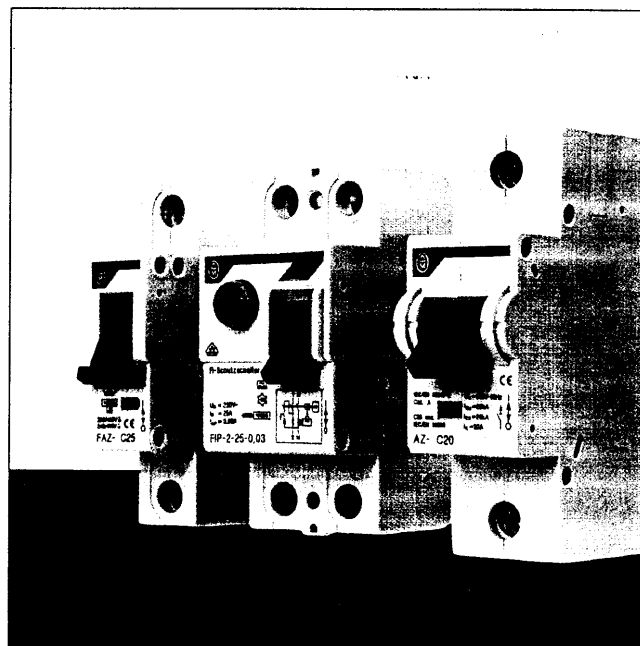
# Catalogue Supplement

## Miniature Circuit-Breakers

## Residual-Current-/Earth Leakage Circuit-Breakers

## Modular Installation Devices

Valid from August 1999



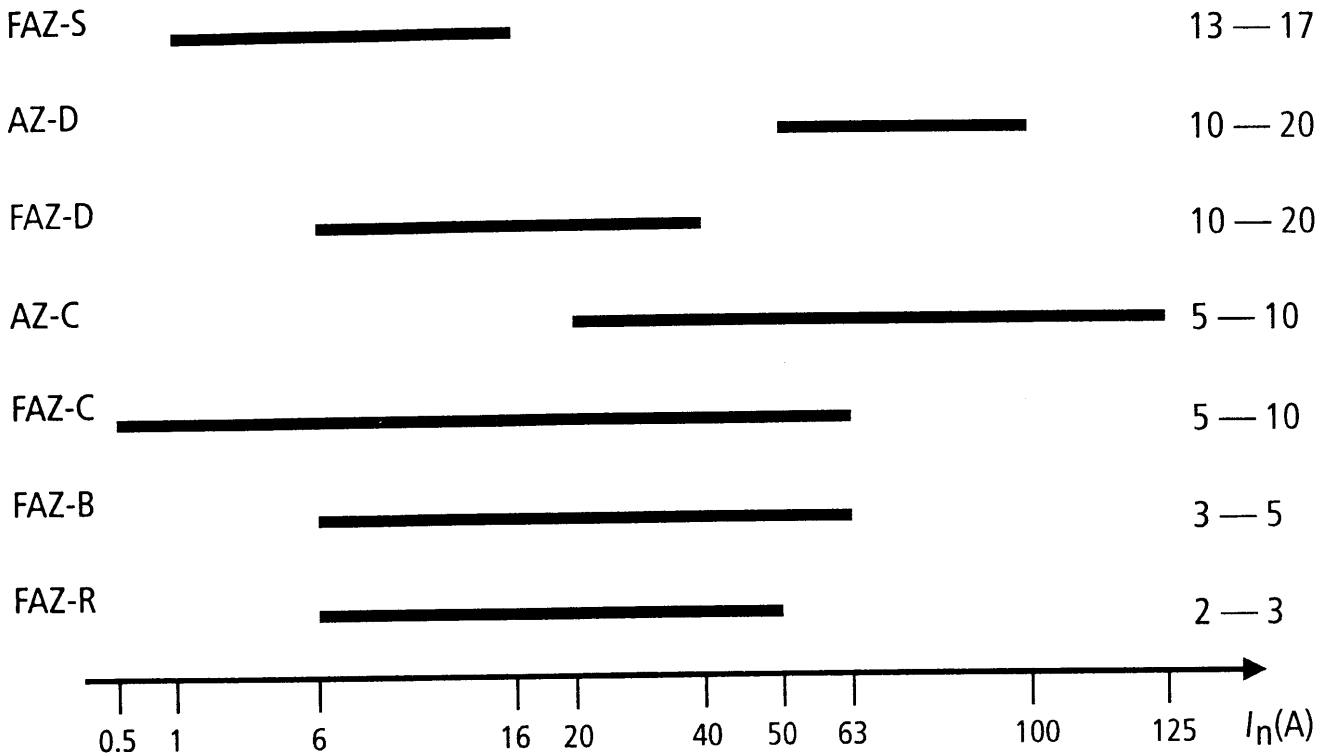
# MOELLER



Think future. Switch to green.®

# FAZ/AZ Miniature Circuit-Breakers

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

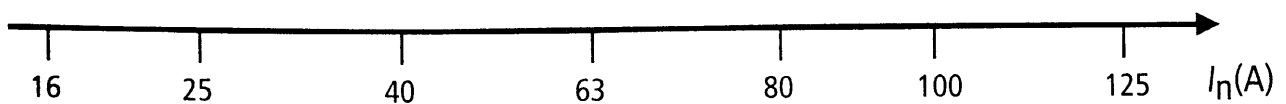


# FI... Residual-Current Circuit-Breakers<sup>1)</sup>

4-pole selective

4-pole

2-pole



<sup>1)</sup> = Earth leakage Circuit-Breaker (ELCB)

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

## Contents

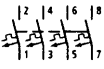

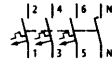
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<sup>1)</sup> = Earth leakage Circuit-Breaker (ELCB)



# 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
-	-	-	-	-	1 off
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	1 off
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	

**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



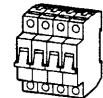
2-pole  
Depth 71 mm  
Width 35 mm



3-pole  
Depth 71 mm  
Width 52.5 mm



4-pole  
Depth 71 mm  
Width 70 mm



## FAZ Miniature Circuit-Breakers

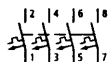
### Switching Capacity 10 kA (IEC/EN 60 898)

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
<b>FAZ miniature circuit-breakers</b>									
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		

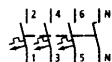
## FAZ Miniature Circuit-Breakers

### 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
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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<sub>n</sub>

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

Rated voltage  
250 V DC per pole

Note polarity

## AZ High-Capacity Miniature Circuit-Breakers

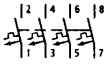
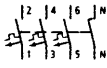
Switching Capacity 15 – 25 kA (IEC/EN 60 947-2)

Characteristic	1-pole				2-pole With 2 protected poles			3-pole With 3 protected poles		
	Rated current $I_n$ A	Type Article no.	Price See Price List	Std. pack	Type Article no.	Price See Price List	Type Article no.	Price See Price List	Std. pack	
<b>AZ high-capacity miniature circuit-breakers</b>										
C Response current of short-circuit release $5 - 10 \times I_n$	20	AZ-C20 211769		12 off	AZ-2-C20 211770		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		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

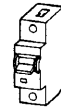
### Switching Capacity 15 – 25 kA (IEC/EN 60 947-2)

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		

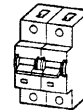
**Notes**

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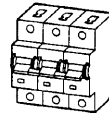
1-pole  
Depth 75 mm  
Width 27 mm



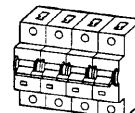
2-pole  
Depth 75 mm  
Width 54 mm



3-pole  
Depth 75 mm  
Width 81 mm

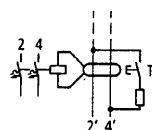


4-pole  
Depth 75 mm  
Width 108 mm

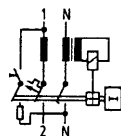


# FAZ Miniature Circuit-Breakers with FIM Residual-Current Protection Module, FILS Combined RCD/MCB Devices

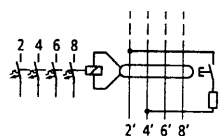
2-pole



2-pole



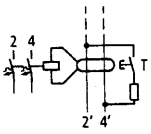
4-pole



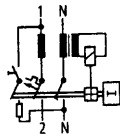
Characteristic	Rated current $I_n$ A	Type Article no.	Price See Price List	Type Article no.	Price See Price List	Type Article no.	Price See Price List	Std. pack
<b>Rated fault current</b>								
$I_{\Delta N} = 30 \text{ mA}$								
B Response current of short-circuit release $3 - 5 \times I_n$	6	-	-	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	-		
<b>Residual-current protection module</b>								
	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

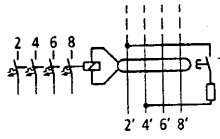
2-pole



2-pole



4-pole



Notes

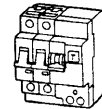
Pulse-current sensitive, surge-proof up to 250 A



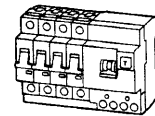
Type	Price	Type	Price	Type	Price	Std. pack
Article no.	See Price List	Article no.	See Price List	Article no.	See Price List	
<b>Rated fault current</b> $I_{\Delta N} = 300 \text{ mA}$						
-		FILS-B6-0,3 211959		-		1 off
FAZ-2-B10-FIM0,3 211831		FILS-B10-0,3 211961		FAZ-4-B10-FIM0,3 211833		
FAZ-2-B16-FIM0,3 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
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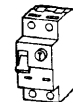
FAZ...-FIM  
2-pole  
Depth 71 mm  
Width 70 mm



4-pole  
Depth 71 mm  
Width 125 mm

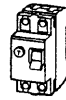
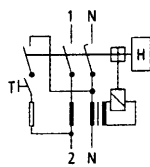


FILS...  
2-pole  
Depth 71 mm  
Width 35 mm

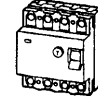
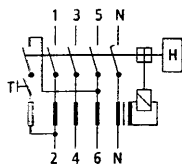


# FIP, FIPS Residual-Current Circuit-Breakers or Earth Leakage Circuit-Breakers (ELCB)

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

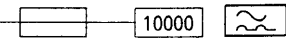
Type  
Article no.

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

selective<sup>1)</sup> 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

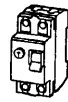
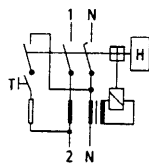
**Notes**

<sup>1)</sup> 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.

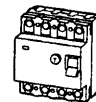
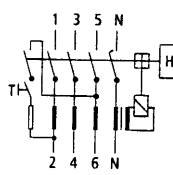
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# FI, FIS Residual-Current Circuit-Breakers or Earth Leakage Circuit-Breakers (ELCB)

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

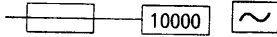
Type  
Article no.

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

selective<sup>1)</sup> and surge-proof 5 kA

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

16	FI-2-16-0,03 211986		-			
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			

1 off

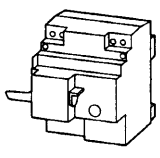
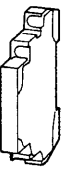
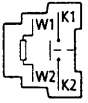
**Notes**

<sup>1)</sup> 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
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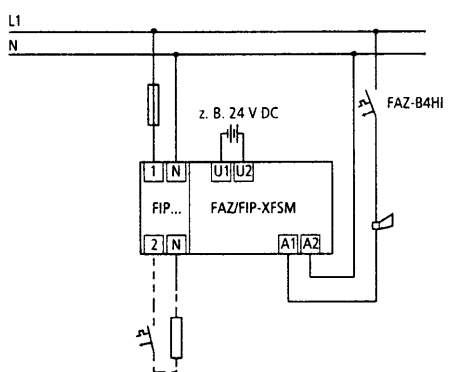
# FAZ/FIP-X FSM Remote Switching Module, FIP-XPM Test Module

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

Notes	FAZ/FIP-XFSM Remote Switching Module	FIP-XPM Test Module
	<ul style="list-style-type: none"> <li>For remote switching and automatic reclosing of FAZ miniature circuit-breakers and FIP(S) residual-current circuit-breakers</li> <li>For remote testing of residual-current protection devices in conjunction with the FIP-XPM test module</li> <li>Can be mechanically interlocked and sealed.</li> <li>LED indication of operational status and alarm status</li> <li>Mechanical switching capacity up to FAZ-4-... 63 or up to FIP(S)-4-80</li> </ul>	<ul style="list-style-type: none"> <li>External test module with defined test impedance corresponding to the rated fault current of the residual-current circuit-breaker</li> <li>Enables remote testing according to the Standard</li> <li>Suitable for remote tripping of residual-current circuit-breakers</li> </ul>

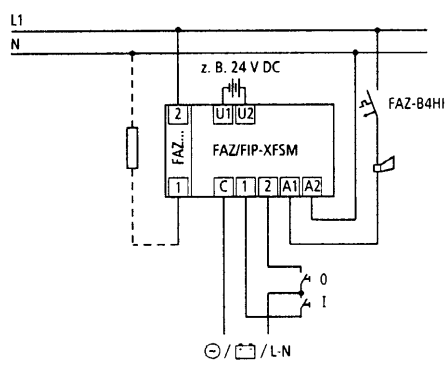
**Circuit examples: (Not installation instructions!)**

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

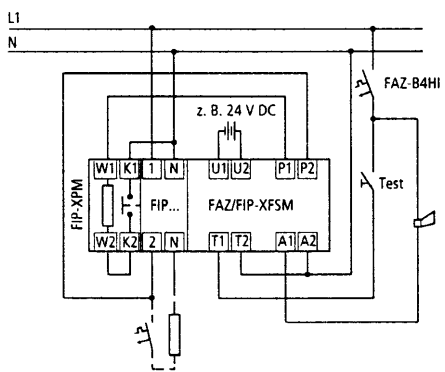


After unintended tripping or a brief disruption, the installation is immediately ready for renewed operation.

**REMOTE SWITCHING:**



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



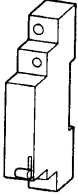
Function control of residual-current circuit-breakers as if by pressing the test button (electrically equivalent).

# Modular Installation Devices

## Impulse Relays, Light Intensity Switches, Counters, Meters

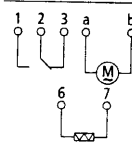
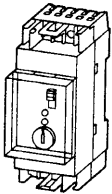
Contact sequence	Rated uninterrupted current $I_n$ A	Actuating voltage 50/60 Hz V AC	Type Article no.	Price See Price List	Std. pack
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### Impulse relay



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	
		16	230	REG-SS20-230 212105	

### Light intensity switch



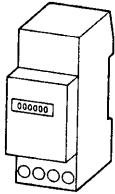
230

REG-DS-ST  
212076

1 off

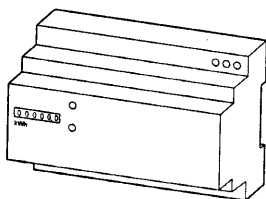
- Rated current 16 A
- Own power consumption about 2 VA
- Switching contact: 1 changeover switch
- Setting ranges: 2 – 100, 2 – 1000, 2 – 10000 lux

### Operational hours counter/pulse counter



5 + 1 digits		230	REG-BSZ230 212080	1 off	<ul style="list-style-type: none"> <li>• Terminal capacity: 1 – 2.5 mm<sup>2</sup>, 2 × 1 – 2.5 mm<sup>2</sup></li> <li>• no reset facility</li> </ul>
		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


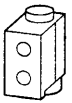

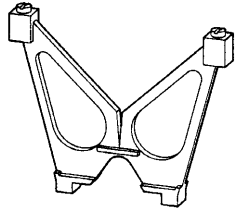
- Suitable for uneven loading
- Auxiliary voltage 230 V AC
- no reset facility
- With down-counter block
- Not suitable for certification by electricity supply companies as power consumption measuring device
- Accuracy Class 2

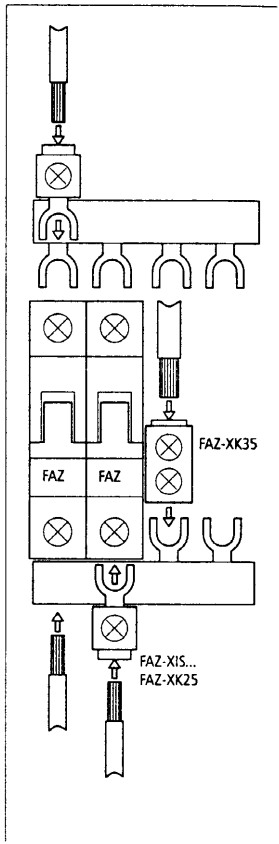




# Mounting Accessories


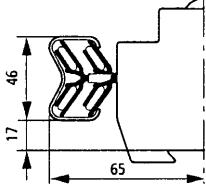
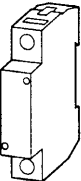
## Incoming Terminals, Protective Covers

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


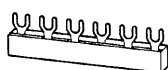
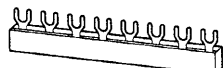


## Mounting Accessories

### FAZ/FIP-XVS Busbar System

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

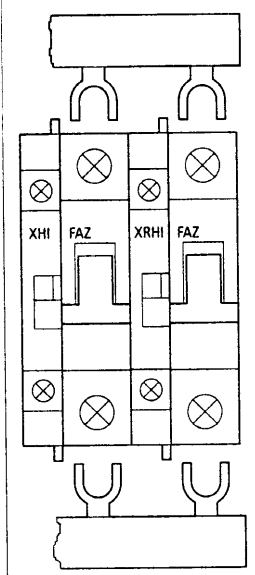
# Mounting accessories Commoning Busbars

	Poles	MCBs	Rated operational current	Type Article no.	Price See Price List	Std. pack
	Qty.	Qty.	$I_e$ A			
<b>Commoning busbars</b>						
<b>For miniature circuit-breakers without auxiliary contacts</b>						
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 <sup>1)</sup>	4	120	FAZ-XIS2/4 212124		10 off
	2 <sup>1)</sup>	6	120	FAZ-XIS2/6 212125		
	2 <sup>1)</sup>	12	120	FAZ-XIS2/12 212126		
	3	6	120	FAZ-XIS3/6 212127		
	3	12	120	FAZ-XIS3/12 212128		
	4 <sup>1)</sup>	8	120	FAZ-XIS4/8 212129		5 off
	4 <sup>1)</sup>	12	120	FAZ-XIS4/12 212130		5 off
<b>For miniature circuit-breakers with auxiliary contacts</b>						
	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 <sup>2)</sup>	6	120	FAZ-XIS31/6-HI 212139		
	3 <sup>2)</sup>	8	120	FAZ-XIS31/8-HI 212140		
	3 <sup>2)</sup>	9	120	FAZ-XIS31/9-HI 212141		

$I_e = 85$  A, terminal capacity 25 mm<sup>2</sup> at ambient temperature 50 °C

$I_e = 100$  A, terminal capacity 35 mm<sup>2</sup> at ambient temperature 50 °C

$I_e = 120$  A, terminal capacity 35 mm<sup>2</sup> at ambient temperature 40 °C

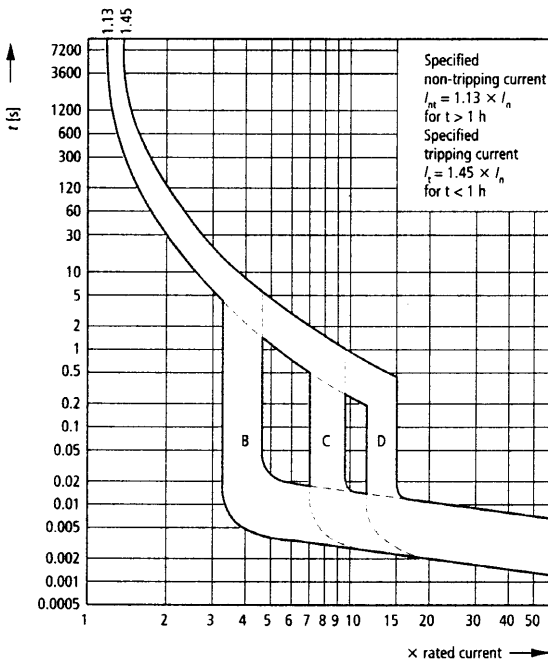


Notes  
 1) 2-pole and 4-pole versions can also be used for residual-current circuit-breakers.  
 2) 1 auxiliary contact per pole

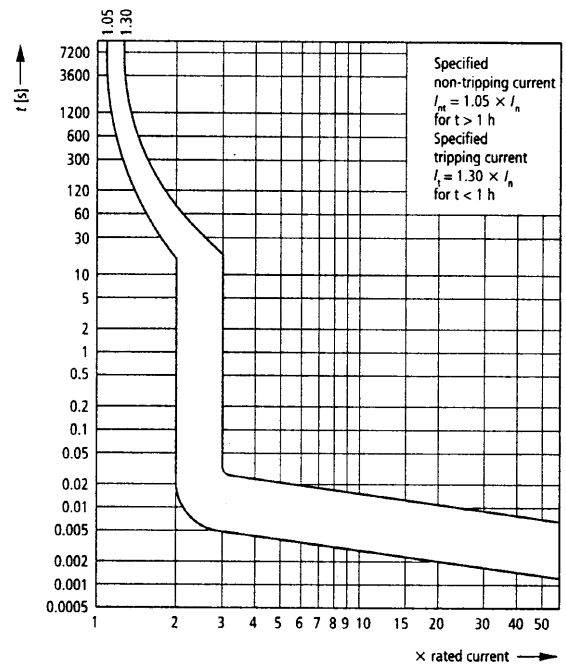
# FAZ Miniature Circuit-Breakers, AZ High-Capacity Miniature Circuit-Breakers

## Tripping Characteristics

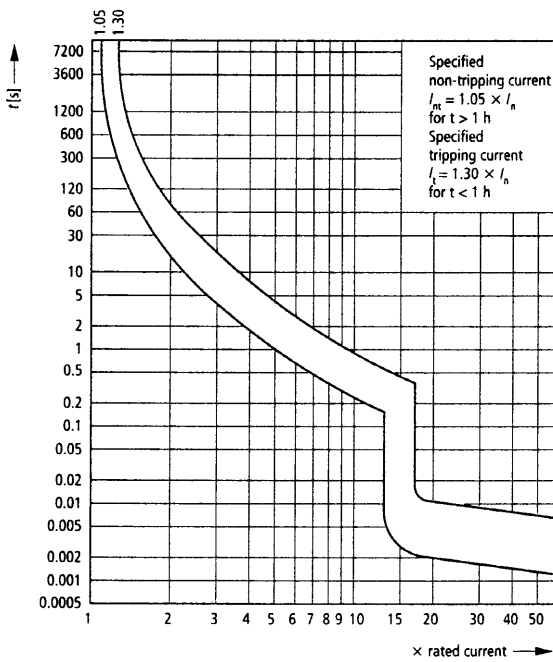
FAZ tripping characteristic at 30 °C: B, C, D to IEC/EN 60 898<sup>1)</sup>



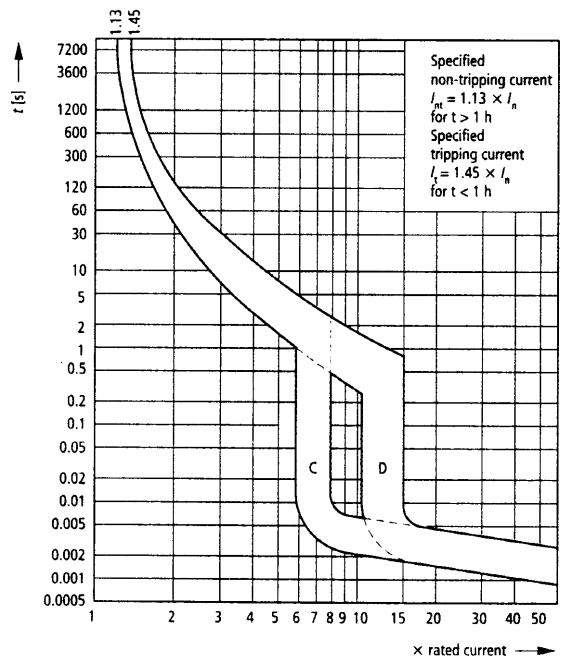
FAZ tripping characteristic at 30 °C: R to IEC/EN 60 947



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

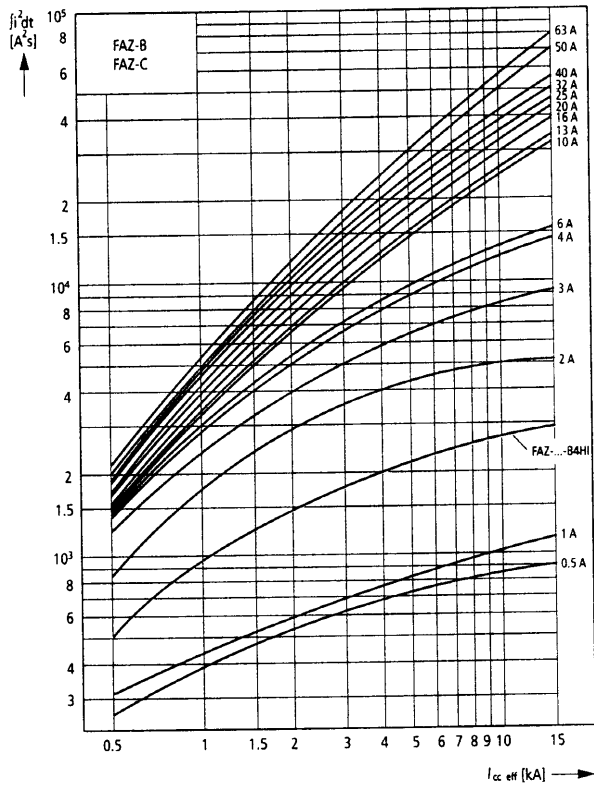


1) The tripping characteristics for MCBs are defined in the IEC/EN 60 898. The tolerances of Moeller MCBs' tripping characteristics have been defined more precisely.

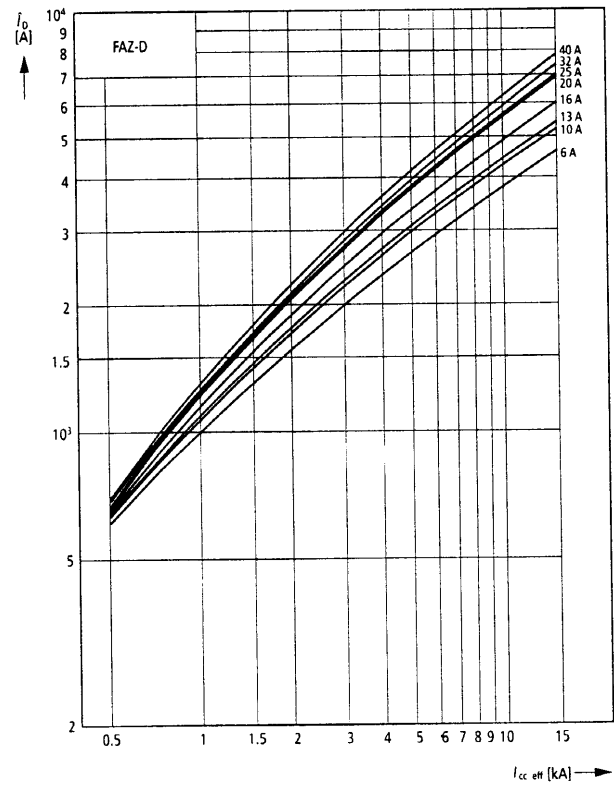
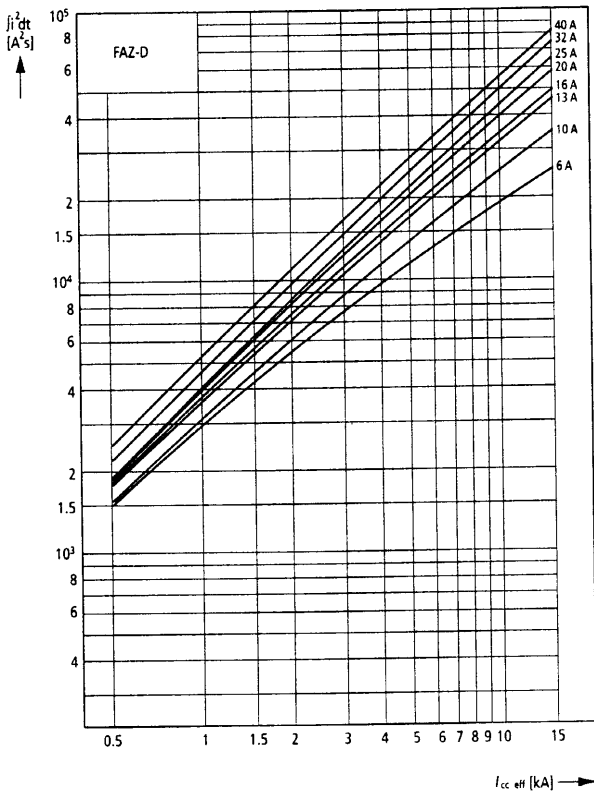
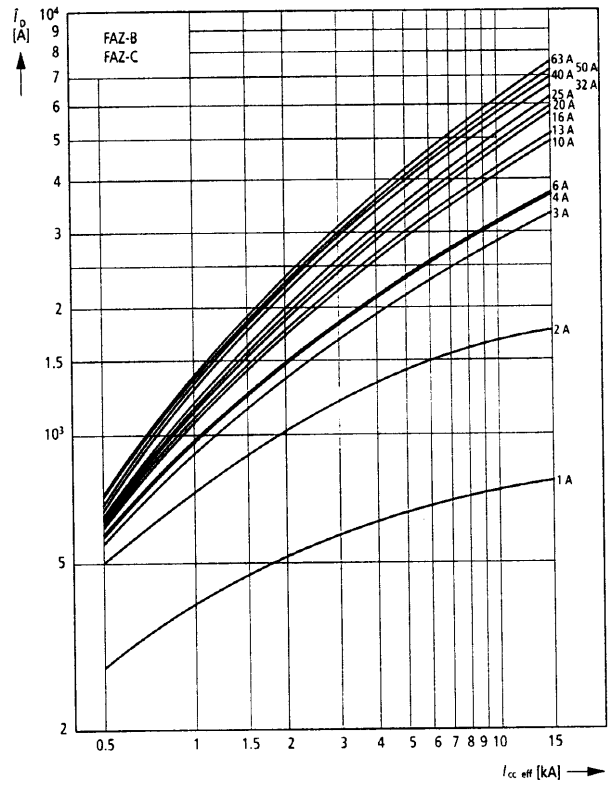
# FAZ Miniature Circuit-Breakers Let-Through Characteristics

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

Let-through energy  $I^2t$



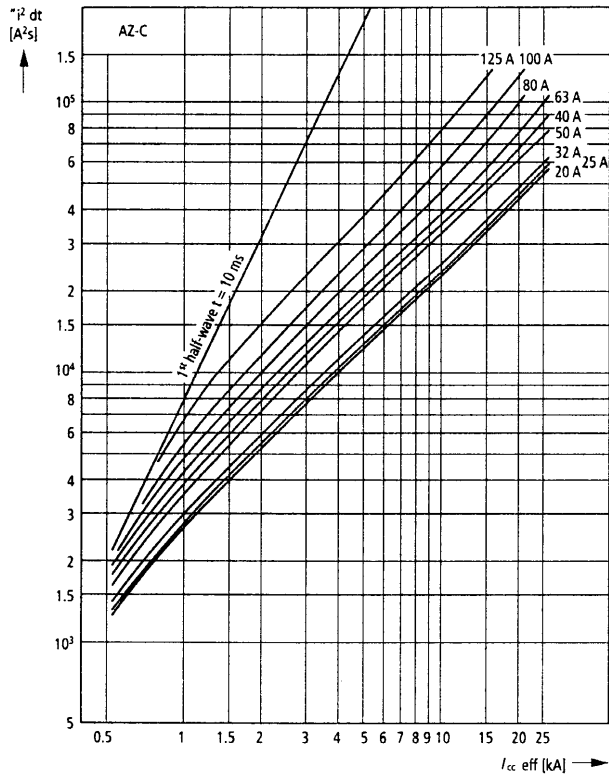
Let-through current  $I_D$



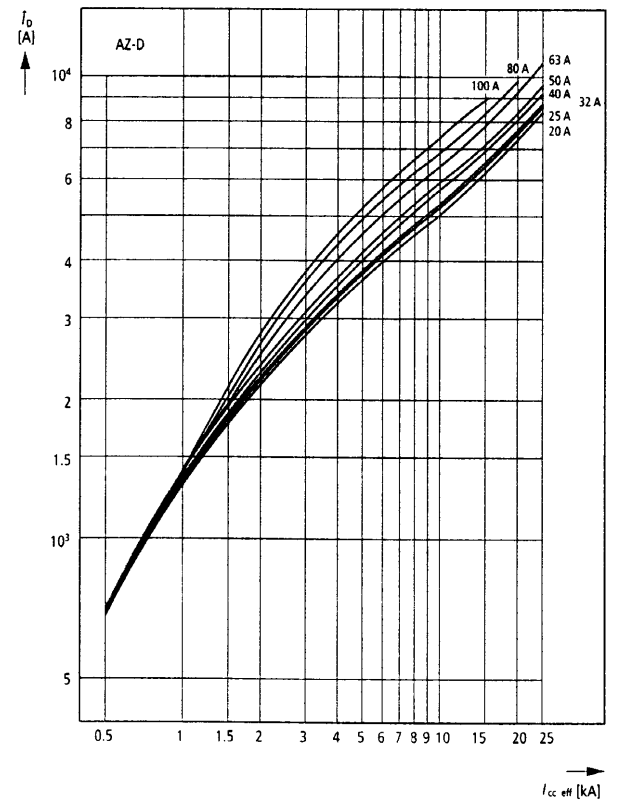
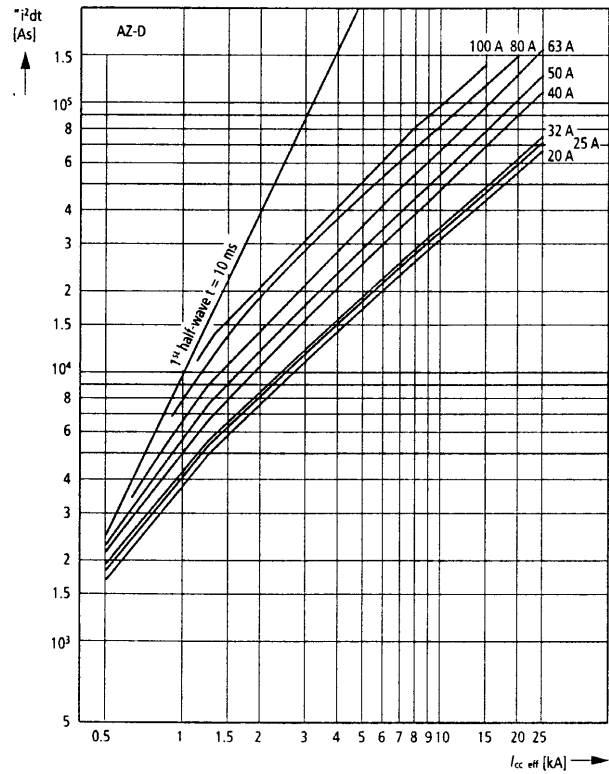
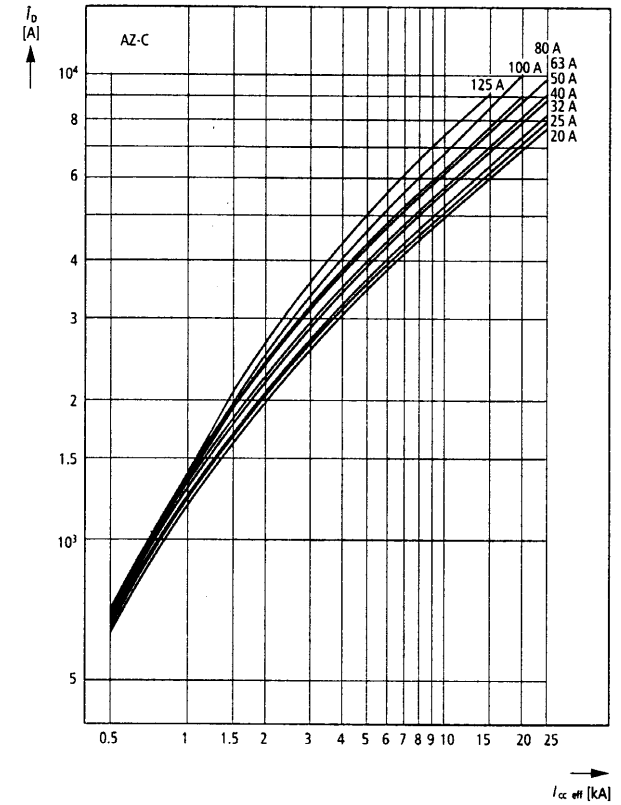
# AZ High-Capacity Miniature Circuit-Breakers Let-Through Characteristics

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
<b>General</b>					
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 <sup>2</sup>	1/25; 2 × 1	1/35; 2 × 1
Tightening torque			Nm	2.4	3.0
<b>Contacts</b>					
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 <sup>3)</sup>		230/400; 240/415	
DC 1-pole/2-pole		V DC		250/500 <sup>1)</sup>	Up to 60
Rated frequency		Hz		50 – 60	
<b>Switching capacity</b>					
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 <sup>2)</sup>		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 $\varphi$	15/0.5	25/0.25
		C, D 80/100	kA/cos $\varphi$	-	20/0.3
		C 125	kA/cos $\varphi$	-	15/0.5
		R 6 – 50	kA/cos $\varphi$	6/0.7	-
		S 1 – 16	kA/cos $\varphi$	4.5/0.8	-
Up to 250 V DC <sup>1)</sup>		1-pole	kA	6	-
Up to 500 V DC <sup>1)</sup>		2-pole	kA	6	-
Lifespan, mechanical (1 operation = 2 switching movements)		Operations		≥ 7000	≥ 10000
<b>Selectivity</b>					
Power-limiting class to IEC/EN 60 898 B, C, D characteristics 0.5 – 32 A				3	
<b>Back-up protection</b>					
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
<b>General</b>					
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 <sup>2</sup>	1/25; 2 × 1		
Tightening torque			Nm	2.4	3.0
					2.4
<b>Contacts</b>					
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
<b>Switching capacity</b>					
Rated short-circuit breaking capacity $I_{cn}$					
	IEC/EN 60 898	B, C 6 – 40	kA	-	10
<b>Releases</b>					
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	
<b>General</b>								
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 <sup>2</sup>	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
<b>Auxiliary contacts</b>								
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
<b>Coil</b>								
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	-
				A (DC)	-	-	15/3 ms	-
								38/2.1 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					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.
$I_n$ [A]	[W]		30 °C	35 °C	40 °C	45 °C	50 °C	55 °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

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

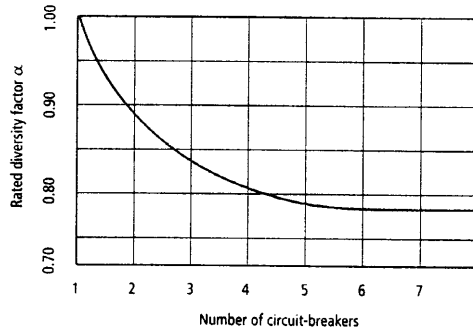
Correction factor k, for calculation of the tripping value of a miniature circuit-breaker when used in a system with a frequency which deviates from 50/60 Hz.  
The response values of the overload release are not dependent on the frequency.

#### Example:

Frequency Hz	Factor k	Type	Frequency	Instantaneous tripping
16 <sup>2</sup> / <sub>3</sub> - 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  $\alpha$  where miniature circuit-breakers mounted side-by-side influence one another thermally, at rated load.

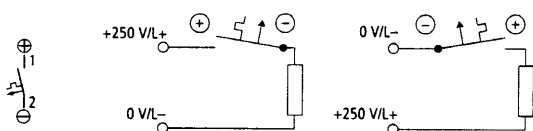


### DC application: FAZ-...-C...-DC

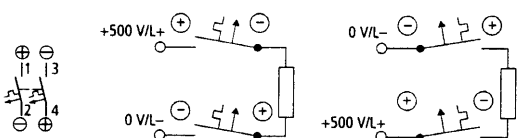
#### Circuit design notes:

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 ≤ 80 A

Left	FIP(S) ≤ 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			
<b>General</b>															
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												
Weight			kg	0.32				0.975		0.22					
Terminal capacity			Solid, stranded		Min./Max.		mm <sup>2</sup>		1/25		1/25				
Tightening torque			Nm		2.4		2.4		3		3				
<b>Contacts</b>															
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
<b>Releases</b>															
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 <sup>1)</sup>			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**

<sup>1)</sup> 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			
<b>General</b>								
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		
<b>Terminal capacity</b>								
Coil connections		Solid	Min./Max.	mm <sup>2</sup>	1/6			
		Flexible with ferrule <sup>1)</sup>	Min./Max.	mm <sup>2</sup>	0.5/4			
Contacts		Solid	Min./Max.	mm <sup>2</sup>	1.5/10			
		Flexible with ferrule <sup>1)</sup>	Min./Max.	mm <sup>2</sup>	1/6			
Tightening torque		Coil A <sub>1</sub> – A <sub>2</sub>		Nm	1			
		Contacts		Nm	1.5			
<b>Load circuit</b>								
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			
<b>Ratings</b>								
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			
<b>Control circuit</b>								
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

<sup>1)</sup> 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 capacity**

## Supplementary 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

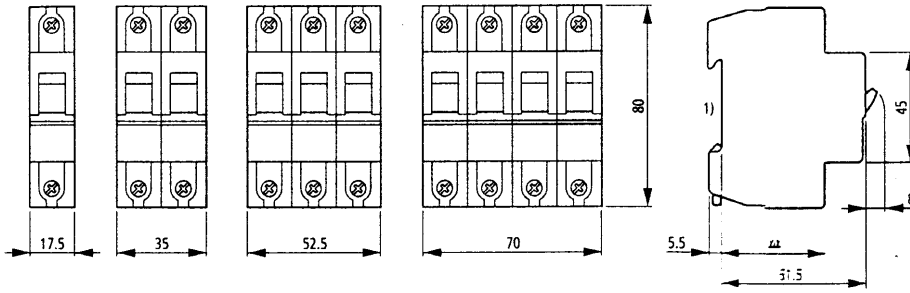
Nm

0.8

# Miniature Circuit-Breakers Dimensions

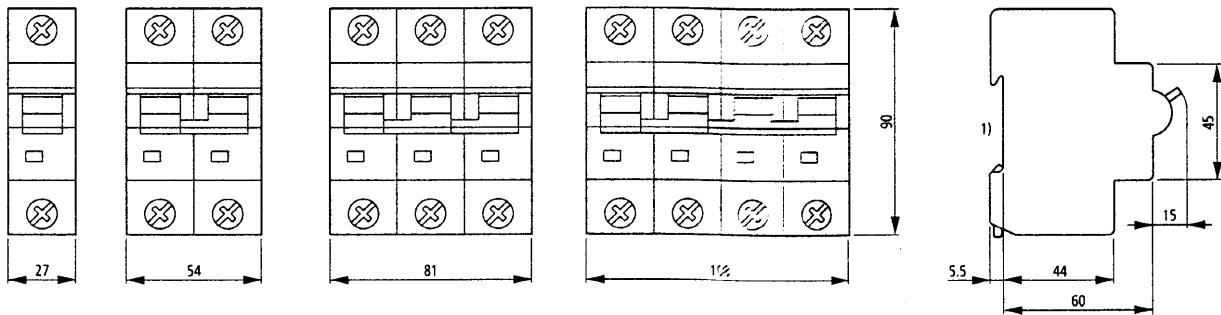
## Miniature circuit-breakers

FAZ



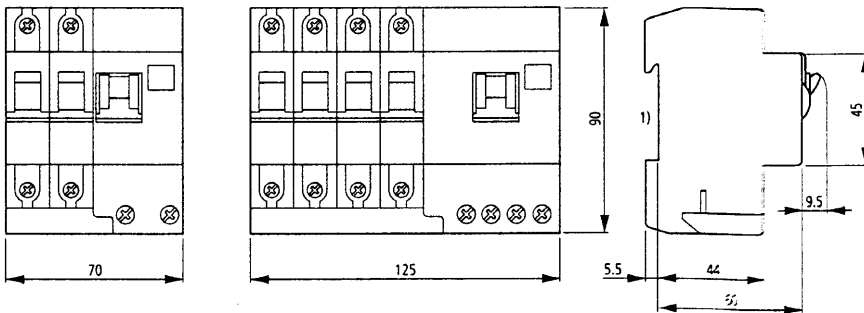
## High-capacity miniature circuit-breakers

AZ



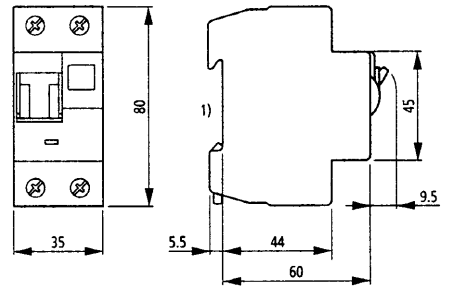
## Miniature circuit-breakers with residual-current protection module

FAZ... - FIM...



## Combined RCD/MCB device

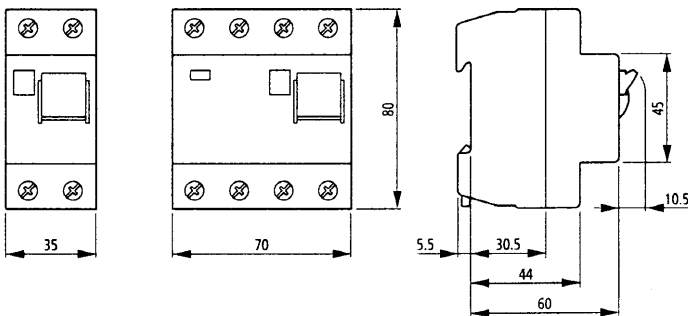
FILS



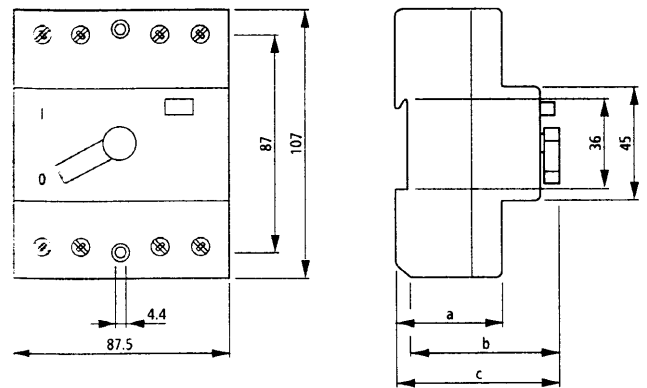
## Residual-current circuit-breakers

FIP, FI

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



FIP  $\geq$  100 A

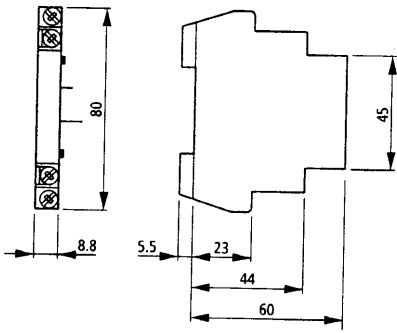


Type	a	b	c
FIP-4-100-0,3 (0,5)	49	68	73
FIP-4-125-... and FIP-4-100-0,03	60	80	85

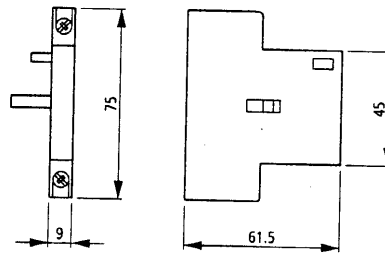
# Miniature Circuit-Breakers Dimensions

## Standard auxiliary contacts

FAZ/FIP-XHI 11

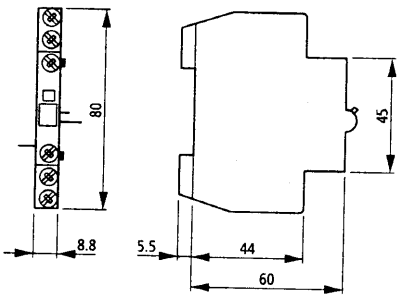


FIP 100/125-XHI 11



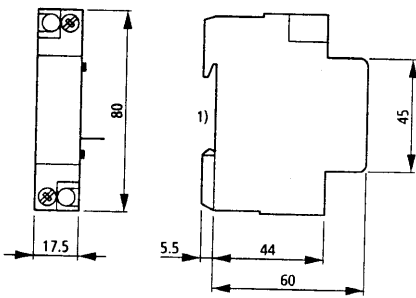
## Trip-indicating auxiliary contacts

FAZ/FIP-XRH1002



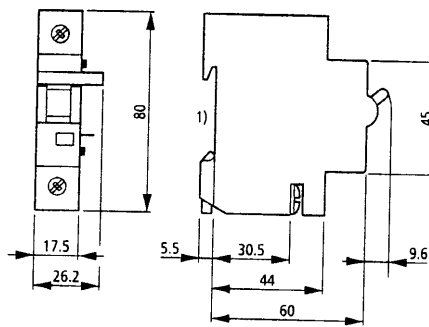
## Undervoltage releases

FAZ-XUA



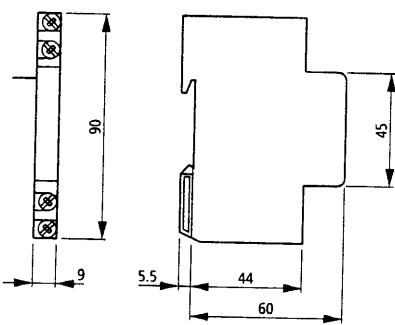
## Shunt release

FAZ-XAA



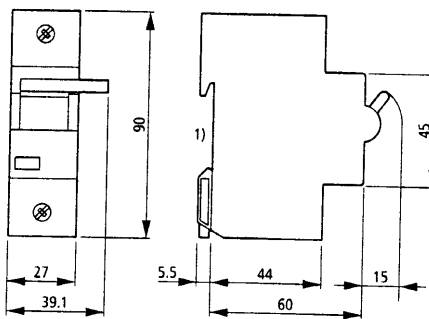
## Standard auxiliary contacts

AZ-XHI 11



## Shunt release

AZ-XAA



## Notes

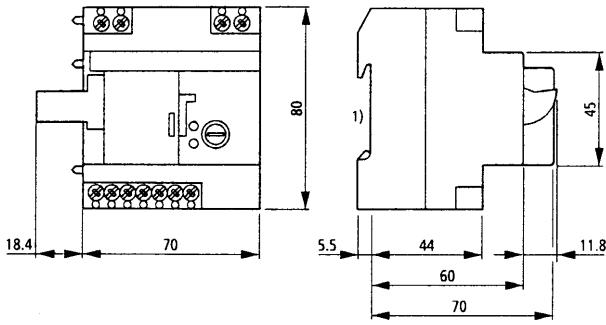
1) Top-hat rail EN 50022



# Miniature Circuit-Breakers Dimensions

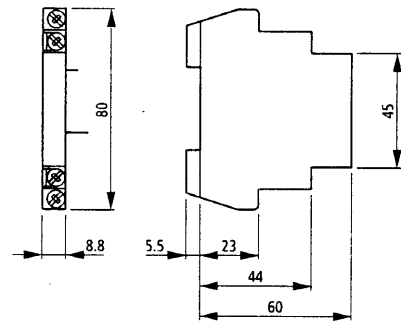
## Remote switching module

FAZ/FIP-XFSM



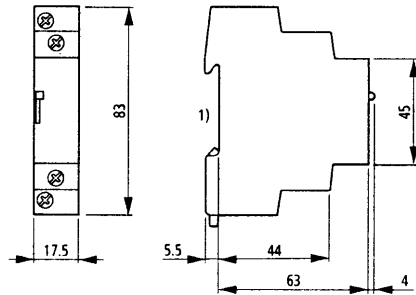
## Test module

FIP-XPM



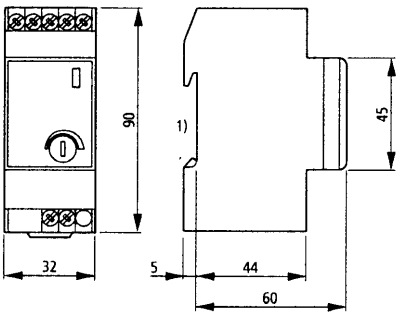
## Impulse relay

REG-SS



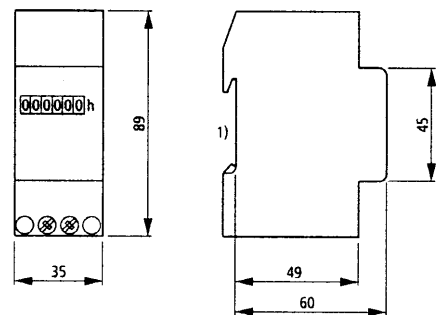
## Light intensity switch

REG-DS-ST



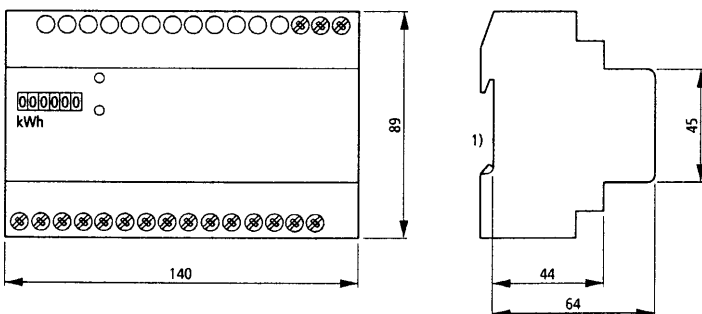
## Operational hours counter/pulse counter

REG-BSZ(IZ)



## Three-phase power meter

REG-KWH 400



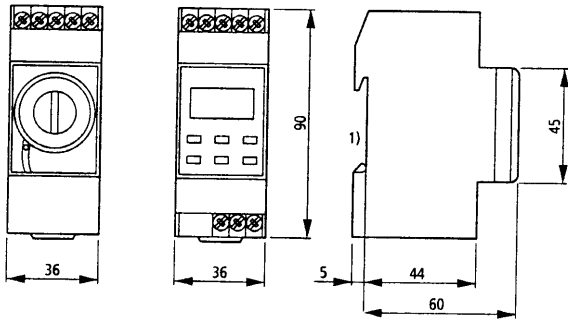
### Notes

1) Top-hat rail EN 50022

# Miniature Circuit-Breakers Dimensions

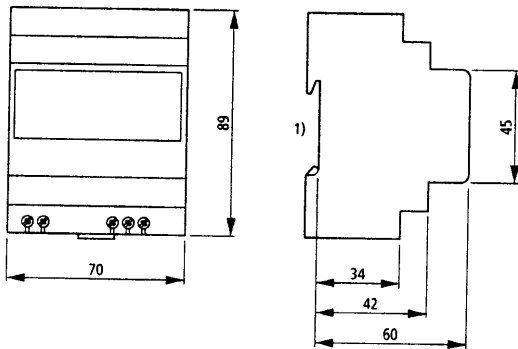
## Timers, analog, digital

REG-SUA...(SUD)



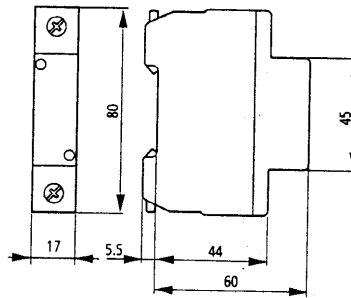
## Meters, analog, digital

REG-AMA(VMA, AMD, VMD)



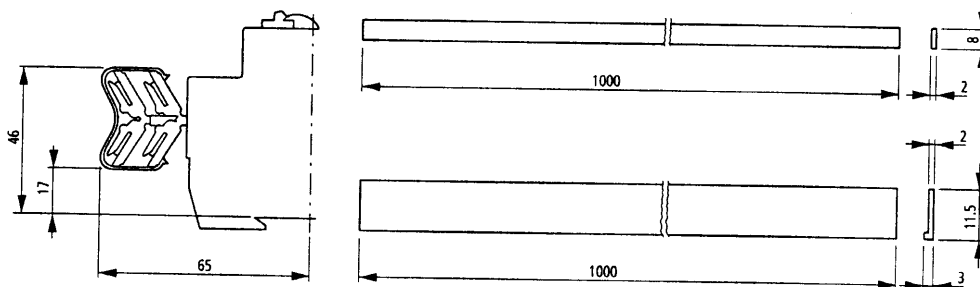
## Feeder block for FAZ/FIP-XVS busbar system

FAZ/FIP-XVS-KL



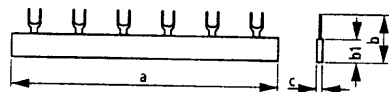
## Busbar system

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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