

Quick selection table

Molded Case Circuit Breakers



MCCBs

AF		30AF		50AF			60AF	
Type		E-type	S-type	N-type	S-type	H-type	N-type	S-type
Type and pole	2-pole	ABE32b	ABS32c	ABN52c	ABS52c	ABH52c	ABN62c	ABS62c
	3-pole	ABE33b	ABS33c	ABN53c	ABS53c	ABH53c	ABN63c	ABS63c
	4-pole	-	ABS34c	ABN54c	ABS54c	ABH54c	ABN64c	ABS64c
Rated current, I _n	A	(3, 5, 10) ^{Note 1} , 15, 20, 30		15, 20, 30, 40, 50			15, 20, 30, 40, 50, 60	
Rated operational voltage, U _e	AC (V)	460	690	690	690	690	690	690
	DC (V)	-	500	500	500	500	500	500
Rated insulation voltage, U _i	V	460	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage, U _{imp}	kV	6	8	8	8	8	8	8

Rated short-circuit breaking capacity (I_{cu}) kA (Sym) , IEC 60947-2

AC	690V	-	2.5	2.5	5	10	2.5	5
	480/500V	-	7.5 (5)	7.5	10	35	7.5	10
	415/460V	2.5	14 (10)	14	18	50	14	18
	380V	2.5	18 (14)	18	22	50	18	22
	220/250V	5	30 (25)	30	35	100	30	35
DC	500V (3P)	-	5	5	10	30	5	10
	250V (2P)	-	5	5	10	30	5	10
I _{cs} =% × I _{cu}		50	100	100	100	100	100	100
Dimensions (mm)	W×H×D	75×96×60mm	75×130×60mm	75×130×60mm		90×155×60mm	75×130×60mm	
	(3-pole)		(Fig. 1)	(Fig. 1)		(Fig. 2)	(Fig. 1)	

* For more detail see the page. Ratings 5-1page - 5-14page, Curves 8-1page - 8-3page, and Drawings 9-1page - 9-4page

Note) 1. The short-circuit breaking capacities of ABS30AF type in () are applied to the rated current in (3, 5, 10A)

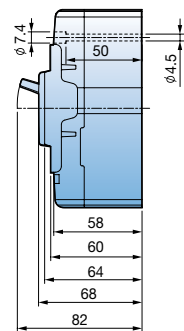
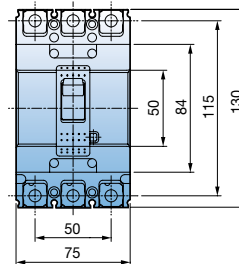
2. MCCBs can be applied to both 50 and 60Hz.

3. Standard type is designed on the basis of 40°C of ambient temperature.

4. There are certain products for hot areas, (30-250AF on the basis of 55°C)

5. The I_{cs}(service breaking capacity) of ABN100e, ABL125/250AF are in ()

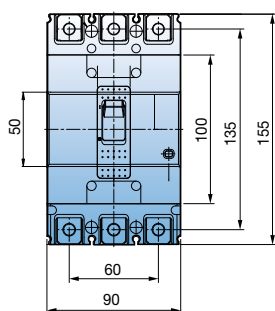
AF Type	30AF	50AF	60AF	100AF	125AF	250AF
ABN		ABN50c 14kA	ABN60c 14kA	ABN100c 18kA ABN100e 31kA		ABN250c 26kA
ABS	ABS30c 14kA	ABS50c 18kA	ABS60c 18kA		ABS125c 37kA	ABS250c 37kA
ABH		ABH50c 50kA			ABH125c 50kA	ABH250c 50kA
ABL					ABL125c 60kA	ABL250c 60kA



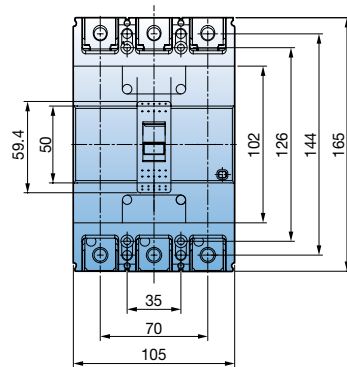
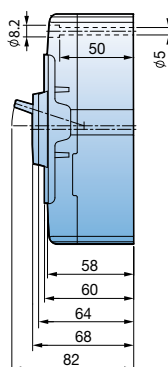
(Fig. 1)



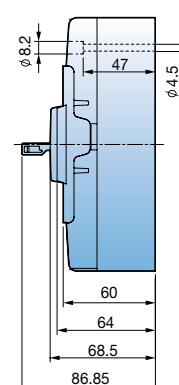
100AF		125AF			250AF			
N-type		S-type	H-type	L-type	N-type	S-type	H-type	L-type
ABN102c	ABN102e	ABS102c	ABH102c	ABL102c	ABN202c	ABS202c	ABH202c	ABL202c
ABN103c	ABN103e	ABS103c	ABH103c	ABL103c	ABN203c	ABS203c	ABH203c	ABL203c
ABN104c	ABN104e	ABS104c	ABH104c	ABL104c	ABN204c	ABS204c	ABH204c	ABL204c
15, 20, 30, 40, 50, 60, 75, 100		15, 20, 30, 40, 50, 60, 75, 100, 125			100, 125, 150, 175, 200, 225, 250			
690	690	690	690	690	690	690	690	690
500	500	500	500	500	500	500	500	500
1000	1000	1000	1000	1000	750	1000	1000	1000
8	8	8	8	8	8	8	8	8
5	7.5 (5)	8	10	10 (10)	8	8	10	10 (10)
10	14 (10)	26	35	35 (35)	18	26	35	35 (35)
18	31 (18)	37	50	60 (50)	26	37	50	60 (50)
22	31 (22)	42	50	60 (50)	30	42	50	60 (50)
35	65 (35)	85	100	125 (100)	65	85	100	125 (100)
10	15 (10)	20	30	30 (30)	10	20	30	30 (30)
10	15 (10)	20	30	30 (30)	10	20	30	30 (30)
100	()	100	100	()	100	100	100	()
75×130×60mm (Fig. 1)		90×155×60mm (Fig. 2)			105×165×60mm (Fig. 3)			



(Fig. 2)



(Fig. 3)



Quick selection table

Molded Case Circuit Breakers



MCCBs

AF		400AF			
Type		N-type	S-type	H-type	L-type
Type and pole	2-pole	ABN402c	ABS402c	ABH402c	ABL402c
	3-pole	ABN403c	ABS403c	ABH403c	ABL403c
	4-pole	ABN404c	ABS404c	ABH404c	ABL404c
Rated current, I _n	A	250, 300, 350, 400			
Rated operational voltage, U _e	AC (V)	690	690	690	690
	DC (V)	500	500	500	500
Rated insulation voltage, U _i	V	1000	1000	1000	1000
Rated impulse withstand voltage, U _{imp}	kV	8	8	8	8

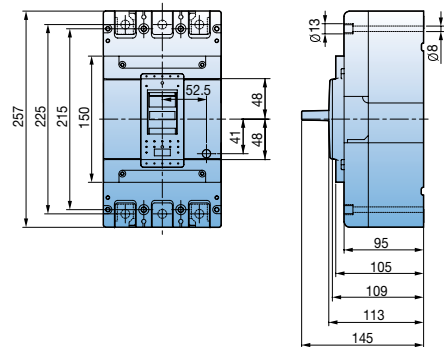
Rated short-circuit breaking capacity (I_{cu}) kA (Sym) , IEC 60947-2

AC	690V	5	8	10	14
	480/500V	18	35	50	65
	415/460V	37	50	65	85
	380V	42	65	70	100
	220/250V	50	75	85	125
DC	500V (3P)	10	20	40	40
	250V (2P)	10	20	40	40
I _{cs} =% × I _{cu}		100	100	100	75
Dimensions (mm)	W × H × D (3-pole)	140 × 257 × 109mm (Fig. 4)			

* For more detail see the page. Ratings 5-15page ~ 5-22page, Curves 8-4page ~ 8-5page, and Drawings 9-5page ~ 9-8page

Note) 1.The short-circuit breaking capacities in () are applied to the rated current in (3, 5, 10A) 3.There are certain products for hot areas. (400-800AF on the basis of 50°C)
2.Standard type is designed on the basis of 40°C of ambient temperature.

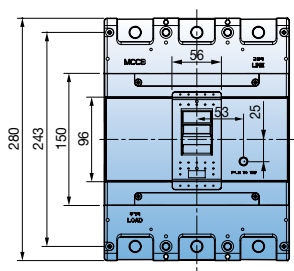
AF Type	400AF	800AF	1000AF	1200AF
ABN	ABN400c 37kA	ABN800c 37kA		
ABS	ABS400c 50kA	ABS800c 65kA	ABS1000b 65kA	ABS1200b 65kA
ABH	ABH400c 65kA			
ABL	ABL400c 85kA	ABL800c 85kA	ABL1000b 85kA	ABL1200b 85kA



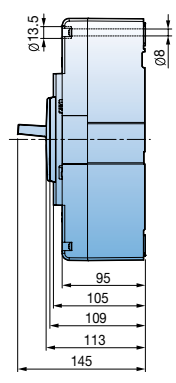
(Fig. 4)



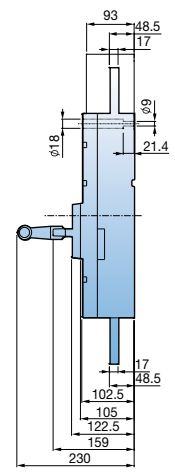
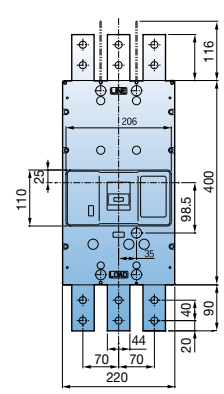
800AF			1000AF		1200AF		
N-type	S-type	L-type	S-type	L-type	S-type		L-type
ABN802c	ABS802c	ABL802c	-	-	-	-	-
ABN803c	ABS803c	ABL803c	ABS1003b	ABL1003b	ABS1203b	ABS1203bE	ABL1203b
ABN804c	ABS804c	ABL804c	ABS1004b	ABL1004b	ABS1204b	-	ABL1204b
500, 630, 700, 800			1000		1200		
690	690	690	600	600	600	600	600
500	500	500	-	-	-	-	-
1000	1000	1000	690	690	690	690	690
8	8	8	6	6	6	6	6
8	10	14	-	-	-	-	-
25	45	65	50	75	50	50	75
37	65	85	65	85	65	65	85
45	75	100	65	85	65	65	85
50	85	125	100	125	100	100	125
10	20	40	-	-	-	-	-
10	20	40	-	-	-	-	-
100	100	75	50	50	50	50	50
210×280×109mm (Fig. 5)			220×400×105mm (Fig. 6)		220×400×105mm (Fig. 6)		



(Fig. 5)



(Fig. 6)



Quick selection table

Motor protection Molded Case Circuit Breakers



MCCBs

AF		30AF	50AF		60AF		
Type		S-type	N-type	S-type	H-type	N-type	S-type
Type and pole	3-pole	ABS33cM	ABN53cM	ABS53cM	ABH53cM	ABN63cM	ABS63cM
Rated current, In	A	16, 24	16, 24, 32, 45		60		
Rated operational voltage, Ue	AC (V)	690	690	690	690	690	690
	DC (V)	500	500	500	500	500	500
Rated insulation voltage, Ui	V	750	750	750	750	750	750
Rated impulse withstand voltage, Uimp	kV	8	8	8	8	8	8

Rated short-circuit breaking capacity (Icu) kA (Sym) , IEC 60947-2

AC	690V	2.5	2.5	5	10	2.5	5
	480/500V	7.5	7.5	10	35	7.5	10
	415/460V	14	14	18	50	14	18
	380V	18	18	22	50	18	22
	220/250V	30	30	35	100	30	35
DC	500V (3P)	5	5	10	30	5	10
Ics=% × Icu		100	100	100	100	100	100
Dimensions (mm)	W × H × D (3-pole)	75 × 130 × 60mm (Fig. 1)	75 × 130 × 60mm (Fig. 1)		90 × 155 × 60mm (Fig. 2)	75 × 130 × 60mm (Fig. 1)	

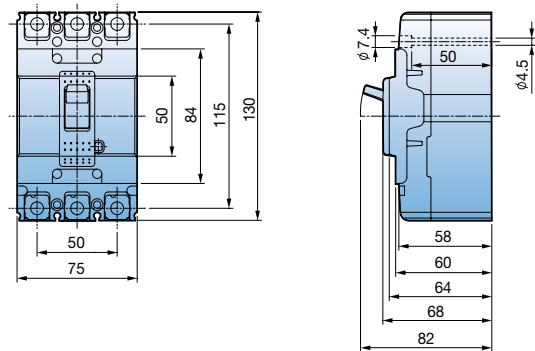
* For more detail see the page. Ratings 5-3page - 5-14page, Curves 8-7page - 8-8page, and Drawings 9-2page - 9-4page

Note) 1. Same electrical and physical specification with MCCB.

2. Accessory: same application with MCCB

3. MCCBs can be applied to both 50 and 60Hz.

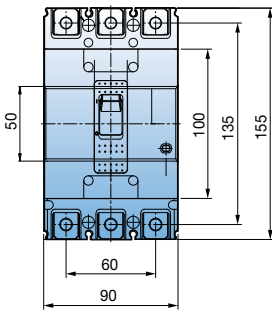
AF Type	30AF	50AF	60AF	100AF	125AF	250AF
ABN		ABN50cM 14kA	ABN60cM 14kA	ABN100cM 18kA		
ABS	ABS30cM 14kA	ABS50cM 18kA	ABS60cM 18kA		ABS125cM 37kA	ABS250cM 37kA
ABH		ABH50cM 50kA			ABH125cM 50kA	ABH250cM 50kA



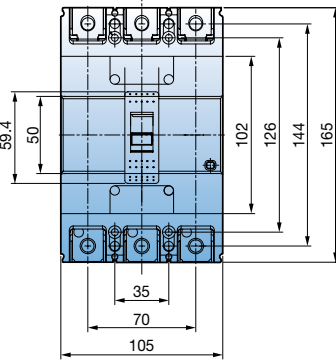
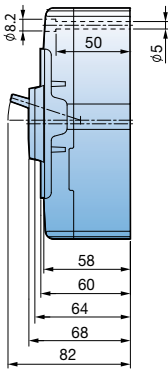
(Fig. 1)



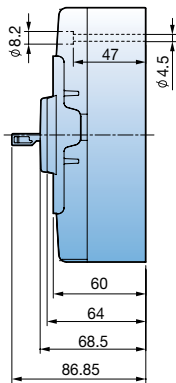
100AF	125AF		250AF	
N-type	S-type	H-type	S-type	H-type
ABN103c	ABS103cM	ABS33cM	ABS203cM	ABH203cM
60, 75, 90	60, 75, 90		125, 150, 175, 225	
690	690	690	690	690
500	500	500	500	500
750	750	750	750	750
8	8	8	8	8
5	8	10	8	10
10	26	35	26	35
18	37	50	37	50
22	42	50	42	50
35	85	100	85	100
10	20	30	20	30
100	100	100	100	100
75×130×60mm (Fig. 1)	90×155×60mm (Fig. 2)		105×165×60mm (Fig. 3)	



(Fig. 2)



(Fig. 3)



Quick selection table

ZCT Molded Case Circuit Breakers



MCCBs

AF		30AF	50AF			60AF	
Type		S-type	N-type	S-type	H-type	N-type	S-type
Type and pole	2-pole	-	-	-	ABH52cZ	-	-
	3-pole	ABS33cZ	ABN53cZ	ABS53cZ	ABH53cZ	ABN63cZ	ABS63cZ
	4-pole	ABS34cZ	ABN54cZ	ABS54cZ	ABH54cZ	ABN64cZ	ABS64cZ
Rated current, I _n	A	15, 20, 30	15, 20, 30, 40, 50			15, 20, 30, 40, 50, 60	
Rated operational voltage, U _e	AC (V)	690	690	690	690	690	690
Rated insulation voltage, U _i	V	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage, U _{imp}	kV	8	8	8	8	8	8

Rated short-circuit breaking capacity (I_{cu}) kA (Sym) , IEC 60947-2

AC	690V	2.5	2.5	5	10	2.5	5
	480/500V	7.5	7.5	10	35	7.5	10
	415/460V	14	14	18	50	14	18
	380V	18	18	22	50	18	22
	220/250V	30	30	35	100	30	35
I _{cs} =% × I _{cu}		100	100	100	100	100	100
Dimensions (mm)	W × H × D (3-pole)	75 × 130 × 60mm (Fig. 1)	75 × 130 × 60mm (Fig. 1)		90 × 155 × 60mm (Fig. 2)	75 × 130 × 60mm (Fig. 1)	

* For more detail see the page. Ratings 5-3page ~ 5-14page, Curves 8-1page ~ 8-3page, and Drawings 9-2page ~ 9-4page

Note) 1. Same electrical and physical specification with MCCB.

2. Accessory: Same application with MCCB

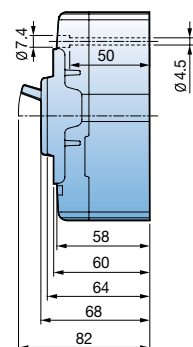
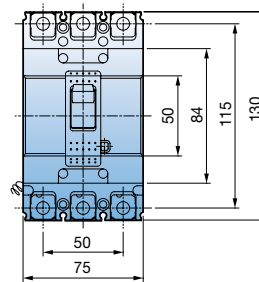
3. MCCBs can be applied to both 50 and 60Hz.

4. Marking ZCT on the Aux. cover right side

5. Dimension of ABH52c, ABS102c and ABH102, which have a built-in ZCT, is 60 (W) X 155 (H) X 60 (D) mm

6. 4-pole product's ampacity on neutral conductor is equal to or less than 50% of the rated current.

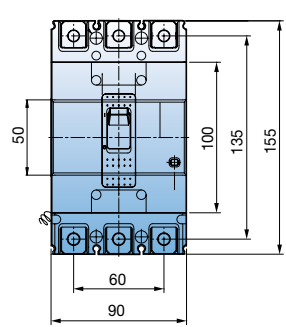
AF Type	30AF	50AF	60AF	100AF	125AF	250AF
ABN		ABN50cZ 14kA	ABN60cZ 14kA	ABN100cZ 18kA		ABN250cZ 26kA
ABS	ABS30cZ 14kA	ABS50cZ 18kA	ABS60cZ 18kA		ABS125cZ 37kA	ABS250cZ 37kA
ABH		ABH50cZ 50kA			ABH125cZ 50kA	ABH250cZ 50kA



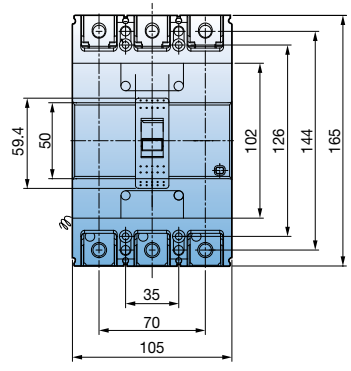
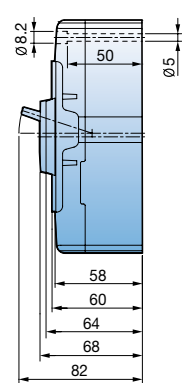
(Fig. 1)



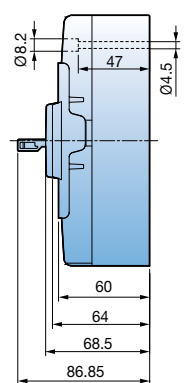
100AF		125AF		250AF		
N-type	S-type	H-type	N-type	S-type	H-type	
-	ABS102cZ	ABH102cZ	-	-	-	
ABN103cZ	ABS103cZ	ABH103cZ	ABN203cZ	ABS203cZ	ABH203cZ	
ABN104cZ	ABS104cZ	ABH104cZ	ABN204cZ	ABS204cZ	ABH204cZ	
15, 20, 30, 40, 50 60, 75, 100	15, 20, 30, 40, 50, 60, 75, 100, 125		100, 125, 150, 175, 200, 225, 250			
690	690	690	690	690	690	
1000	1000	1000	1000	1000	1000	
8	8	8	8	8	8	
5	8	10	8	8	10	
10	26	35	18	26	35	
18	37	50	26	37	50	
22	42	50	30	42	50	
35	85	100	65	85	100	
100	100	100	100	100	100	
75×130×60mm (Fig. 1)	90×155×60mm (Fig. 2)		105×165×60mm (Fig. 3)			



(Fig. 2)



(Fig. 3)



Quick selection table

ZCT Molded Case Circuit Breakers



MCCBs

AF		400AF			
Type		N-type	S-type	H-type	L-type
Type and pole	2-pole	-	-	-	-
	3-pole	ABN403cZ	ABS403cZ	ABH403cZ	ABL403cZ
	4-pole	ABN404cZ	ABS404cZ	ABH404cZ	ABL404cZ
Rated current, I _n	A	250, 300, 350, 400			
Rated operational voltage, U _e	AC (V)	690	690	690	690
Rated insulation voltage, U _i	V	1000	1000	1000	1000
Rated impulse withstand voltage, U _{imp}	kV	8	8	8	8
Rated short-circuit breaking capacity (I_{cu}) kA (Sym) , IEC 60947-2					
AC	690V	5	8	10	14
	480/500V	18	35	50	65
	415/460V	37	50	65	85
	380V	42	65	70	100
	220/250V	50	75	85	125
I _{cs} =% × I _{cu}		100	100	100	75
Dimensions (mm)	W × H × D (3-pole)	140 × 257 × 109mm (Fig. 4)			

* For more detail see the page. Ratings 5-15page ~ 5-18page, Curves 8-4page and Drawings 9-5page ~ 9-6page

Note) 1. Same electrical and physical specification with MCCB.

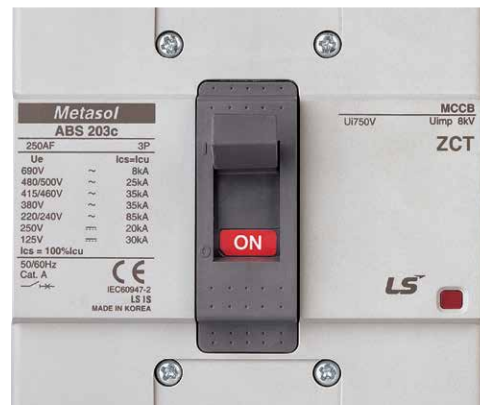
2. Accessory: Same application with MCCB

3. MCCBs can be applied to both 50 and 60Hz.

4. Marking ZCT on the Aux. cover right side

5. 4-pole product's ampacity on neutral conductor is equal to or less than 50% of the rated current.

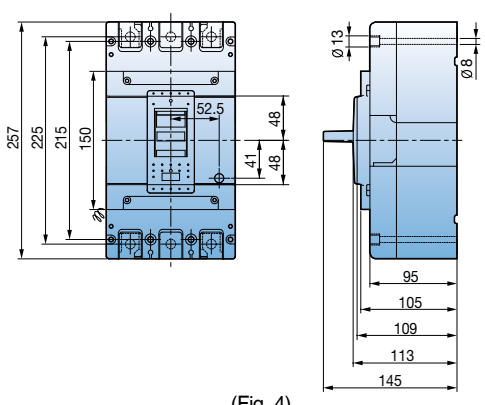
Type \ AF	400AF	800AF
ABN	ABN400c 37kA	ABN800c 37kA
ABS	ABS400c 50kA	ABS800c 65kA
ABH	ABH400c 65kA	
ABL	ABL400c 85kA	ABL800c 85kA



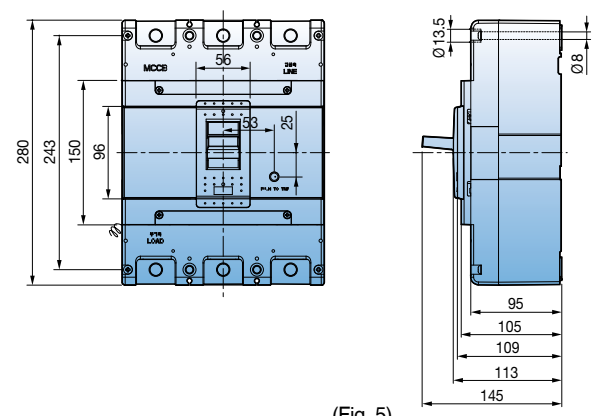


800AF

	N-type	S-type	L-type
	-	-	-
	ABN803cZ	ABS803cZ	ABL803cZ
	-	-	-
	500, 630, 700, 800		
	690	690	690
	1000	1000	1000
	8	8	8
	8	10	14
	25	45	65
	37	65	85
	45	75	100
	50	85	125
	100	100	75
	210×280×109mm (Fig. 5)		



(Fig. 4)



(Fig. 5)

Quick selection table

Earth Leakage Circuit Breakers



ELCBs

AF		30AF	50AF			60AF	
Type		S-type	N-type	S-type	H-type	N-type	S-type
Type and pole	2-pole	EBS32c	EBN52c	-	-	-	-
	3-pole	EBS33c	EBN53c	EBS53c	EBH53c	EBN63c	EBS63c
	4-pole	EBS34c	-	EBS54c	EBH54c	-	EBS64c
Protective function		Overload, short-circuit and ground fault	Overload, short-circuit and ground fault			Overload, short-circuit and ground fault	
Rated current, I _n	A	(5, 10) ^{Note 1} , 15, 20, 30	15, 20, 30, 40, 50			60	
Rated impulse withstand voltage, U _{imp}	kV	6	6			6	
Instantaneous type	Rated residual current, I _{Δn}	mA	30, 100, 100/200/500, 100/300/500mA			30, 100, 100/200/500, 100/300/500mA	
	Residual current off-time at I _{Δn}	sec	≤ 0.1 sec			≤ 0.1 sec	
	Rated operational voltage, U _e	AC (V)	220/460			220/460	
Time delay type	Rated residual current	1A	0.1/0.2/0.5/1			0.1/0.2/0.5/1	
	Intentional time delay	1s	0/0.2/0.5/1			0/0.2/0.5/1	
	Rated residual current	2A	0.1/0.4/1/2			0.1/0.4/1/2	
	Intentional time delay	2s	0.5/1/1.5/2			0.5/1/1.5/2	

Rated short-circuit breaking capacity (I_{cu}) kA (Sym) , IEC 60947-2

AC	415/460V	14 (10)	14	18	50	14	18
	220/250V	30 (25)	30	35	100	30	35
I _{cs} =% × I _{cu}		100	100	100	100	100	100
Dimensions (mm)	W × H × D	75 × 130 × 60mm	75 × 130 × 60mm		90 × 155 × 60mm	75 × 130 × 60mm	
	(3-pole)	(Fig. 1)	(Fig. 1)		(Fig. 2)	(Fig. 1)	

* For more detail see the page. Ratings 6-1page ~ 6-12page, Curves 8-1 ~ 8-3page and Drawings 9-9page ~ 9-11page

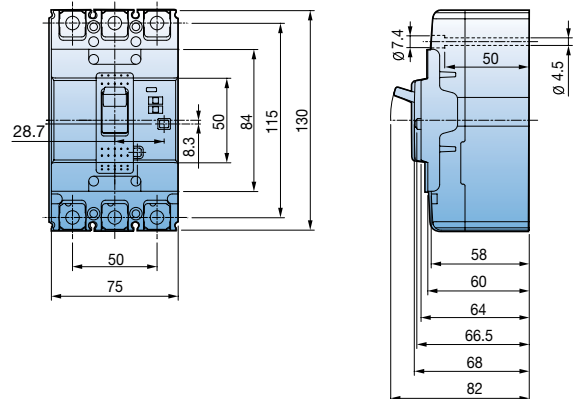
Note) 1. MCCBs can be applied to both 50 and 60Hz.

2. Do not test withstand voltage or insulation resistance test between poles to avoid the damage of the PCB.

3. The short-circuit breaking capacities in () are applied to the rated current in (5, 10A)

4. Below 250AF Some ELCBs have a test lead type for remote testing.

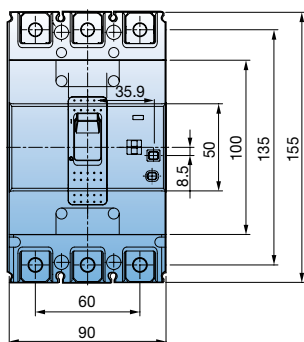
AF Type	30AF	50AF	60AF	100AF	125AF	250AF
EBS	EBS30c 14kA	EBS50c 18kA	EBS60c 18kA		EBS125c 37kA	EBS250c 37kA
EBN		EBN50c 14kA	EBN60c 14kA	EBN100c 18kA		EBN250c 26kA
EBH		EBH50c 50kA			EBH125c 50kA	EBH250c 50kA



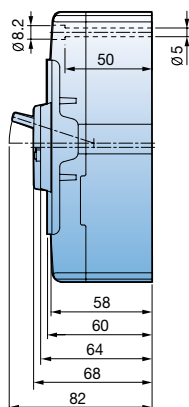
(Fig. 1)



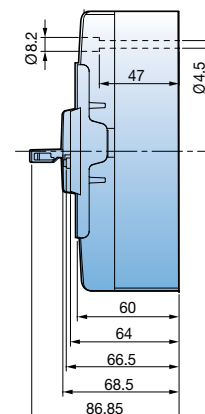
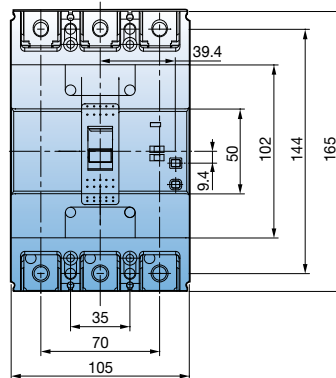
100AF		125AF		250AF		
N-type	S-type	H-type	N-type	S-type	H-type	
EBN102c	-	-	EBN202c	-	-	
EBN103c	EBS103c	EBH103c	EBN203c	EBS203c	EBH203c	
EBN104c	EBS104c	EBH104c	-	EBS204c	EBH204c	
Overload, short-circuit and ground fault	Overload, short-circuit and ground fault		Overload, short-circuit and ground fault			
60, 75, 100	15, 20, 30, 40, 50, 60, 75, 100, 125		100, 125, 150, 175, 200, 225, 250			
6	6		6			
30, 100, 100/200/500, 100/300/500mA	30, 100, 100/200/500, 100/300/500mA		30, 100, 100/200/500, 100/300/500mA			
≤0.1 sec	≤0.1 sec		≤0.1 sec			
220/460	220/460		220/460			
0.1/0.2/0.5/1	0.1/0.2/0.5/1		0.1/0.2/0.5/1			
0/0.2/0.5/1	0/0.2/0.5/1		0/0.2/0.5/1			
0.1/0.4/1/2	0.1/0.4/1/2		0.1/0.4/1/2			
0.5/1/1.5/2	0.5/1/1.5/2		0.5/1/1.5/2			
18	37	50	26	37	50	
35	85	100	65	85	100	
100	100	100	100	100	100	
75 × 130 × 60mm (Fig. 1)	90 × 155 × 60mm (Fig. 2)		105 × 165 × 60mm (Fig. 3)			



(Fig. 2)



(Fig. 3)



Quick selection table

Earth Leakage Circuit Breakers



ELCBs

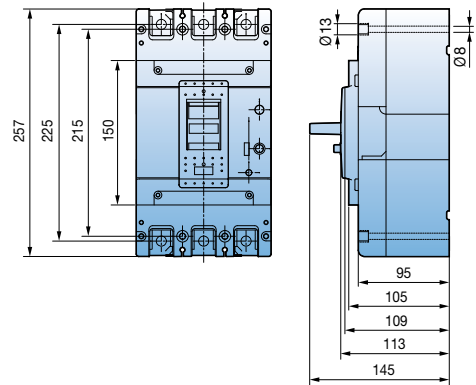
AF		400AF			
Type		N-type	S-type	H-type	L-type
	3-pole	EBN403c	EBS403c	EBH403c	EBL403c
	4-pole	EBN404c	EBS404c	EBH404c	EBL404c
Protective function		Overload, short-circuit and ground fault			
Rated current, I _n	A	250, 300, 350, 400			
Rated residual current, I _{Δn}	mA	30, 100/200/500mA			
Rated operational voltage, U _e	AC (V)	220/460	220/460	220/460	220/460
Rated impulse withstand voltage, U _{imp}	kV	6	6	6	6
Residual current off-time at I _{Δn}	sec	≤0.1 sec	≤0.1 sec	≤0.1 sec	≤0.1 sec
Rated short-circuit breaking capacity (I_{cu}) kA (Sym) , IEC 60947-2					
AC	415/460V	37	50	65	85
	220/250V	50	75	85	125
I _{cs} =% × I _{cu}		100	100	100	75
Dimensions (mm)	W × H × D	140 × 257 × 109mm			
	(3-pole)	(Fig. 4)			

* For more detail see the page. Ratings 6-13page ~ 6-18page, Curves 8-4~ 8-5page and Drawings 9-12page ~ 9-14page

Note) 1. MCCBs other than 1,000/1200AF can be applied to both 50 and 60Hz.

2. Do not test withstand voltage or insulation resistance test between poles to avoid the damage of the PCB.

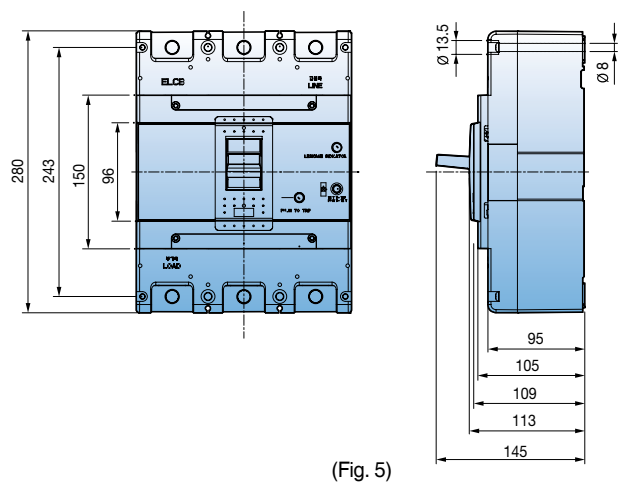
Type	AF	400AF	800AF	1000AF	1200AF
EBN		EBN400c 37kA	EBN800c 37kA		
EBS		EBS400c 50kA	EBS800c 65kA	EBS1000b 65kA	EBS1200b 65kA
EBH		EBH400c 65kA			
EBL		EBL400c 85kA	EBL800c 85kA		



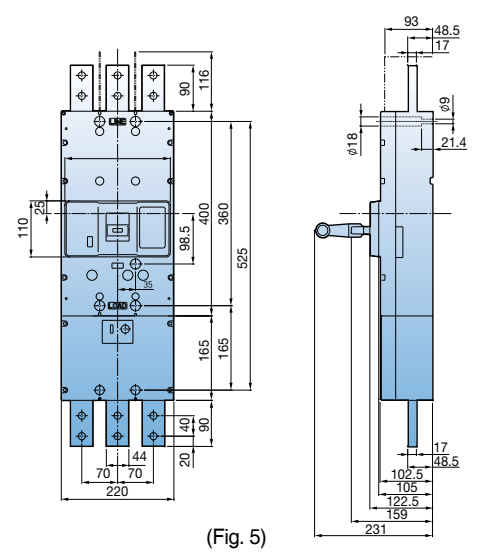
(Fig. 4)



	800AF			1000AF	1200AF
	N-type	S-type	L-type	S-type	S-type
	EBN803c	EBS803c	EBL803c	EBN1003b	EBS1203b
	-	-	-	-	-
	Overload, short-circuit and ground fault			Overload, short-circuit and ground fault	
	500, 630, 700, 800			1000	1200
	30, 100/200/500mA			100/200/500mA	100/200/500mA
	220/460	220/460	220/460	220/460	220/460
	6	6	6	-	-
	≤0.1 sec	≤0.1 sec	≤0.1 sec	≤0.1 sec	≤0.1 sec
	37	65	85	85	85
	50	85	125	125	125
	100	100	75	-	-
	210×280×109mm (Fig. 5)			220 × 565 × 105mm (Fig. 6)	



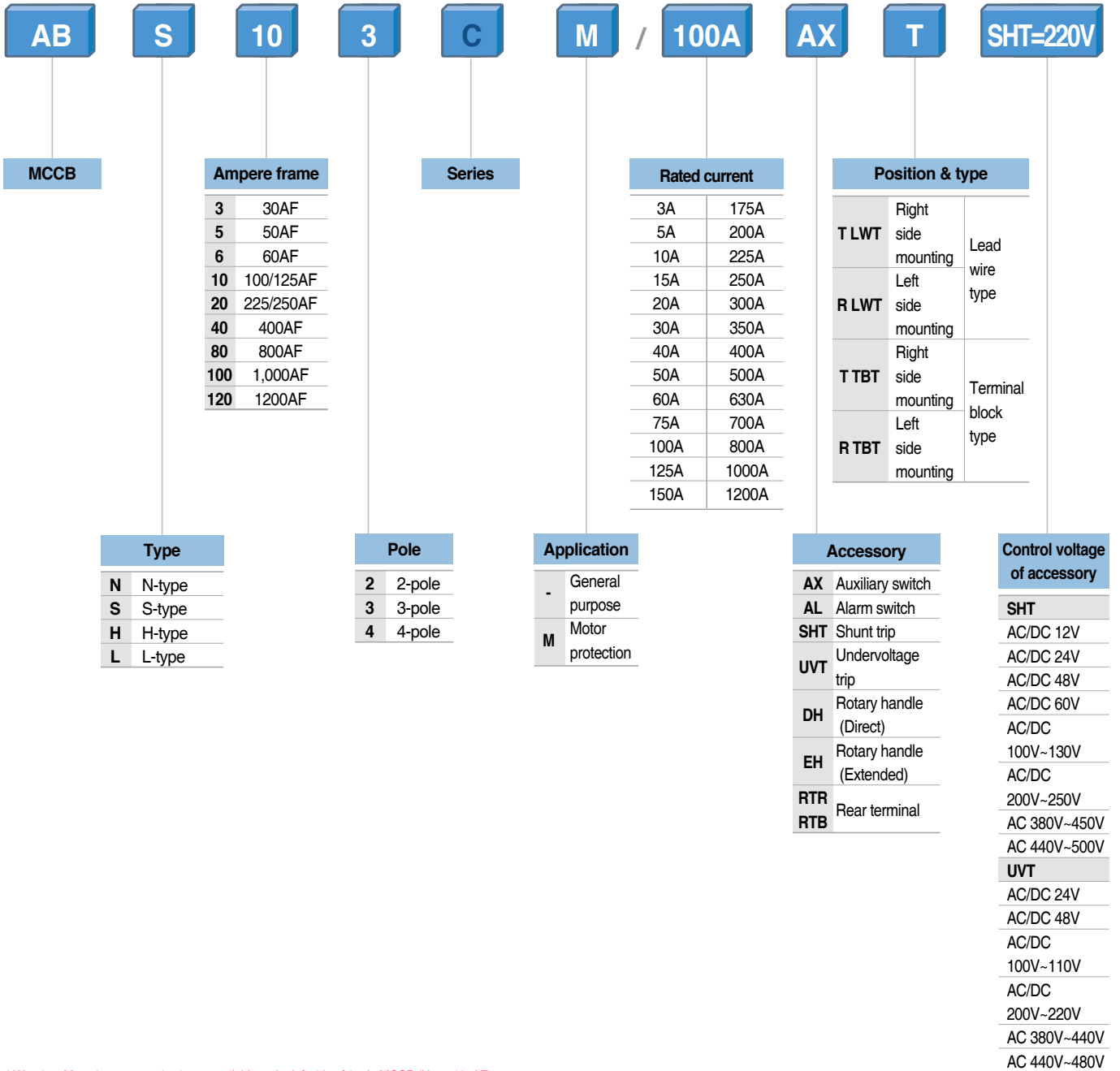
(Fig. 5)



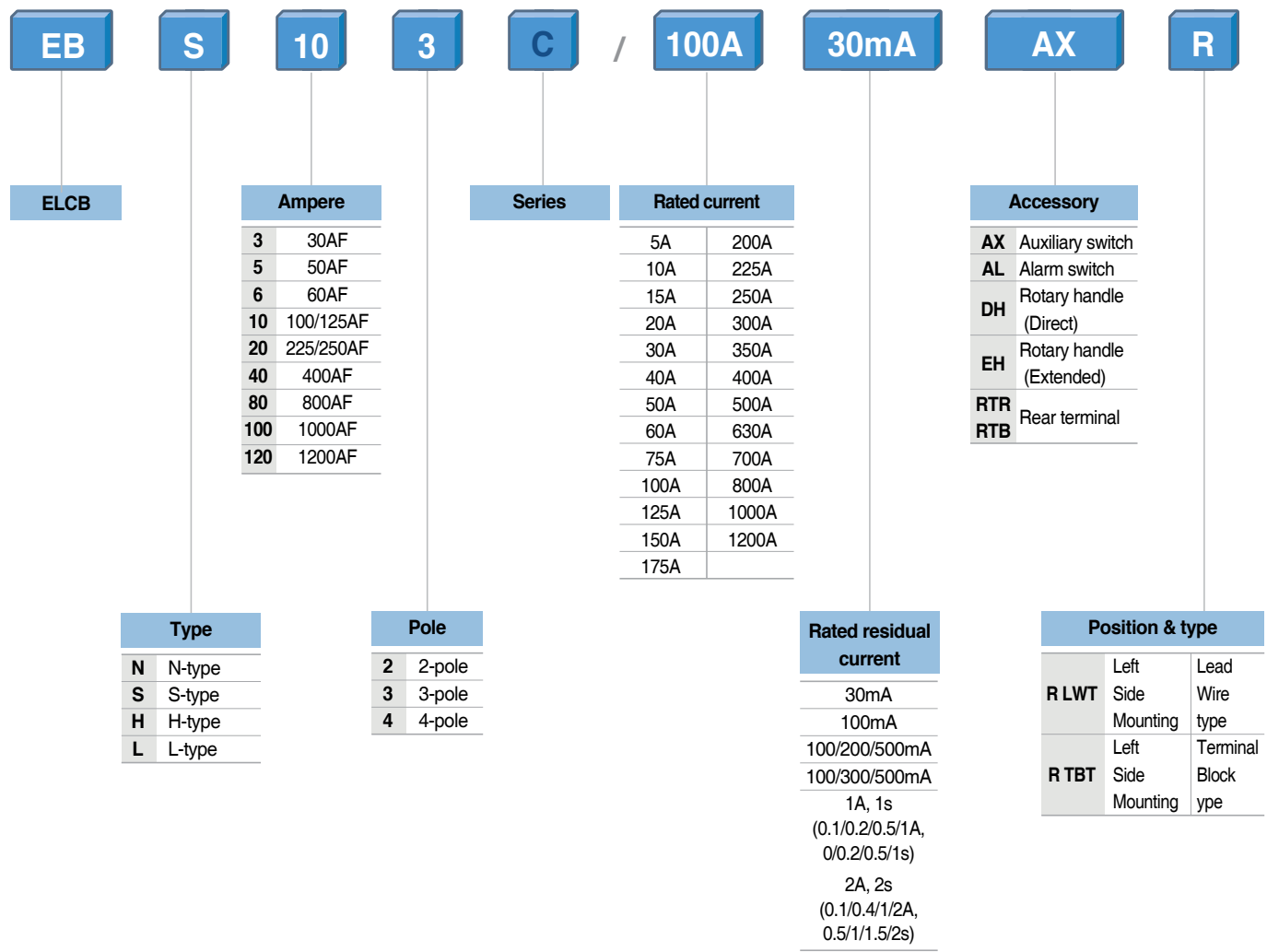
(Fig. 5)

Type numbering system

MCCB



ELCB



* Warning: Mounting accessories is not available at the right side ELCB (Up to 250AF)