



**Metasol** Meta Solution

# MCCB/ELCB

Molded Case Circuit Breakers  
Earth Leakage Circuit Breakers



**LSIS**

# Marking and configuration

## MCCB

### MCCB model

- ABN: Economic type
- ABS: Standard type
- ABH: High capacity type

### Standardized characteristics

- Ui: Rated insulation voltage
- Uimp: Impulse withstand voltage
- Ue: Rated operational voltage
- Icu: Ultimate breaking capacity
- Ics: Service breaking capacity



Rated frequency

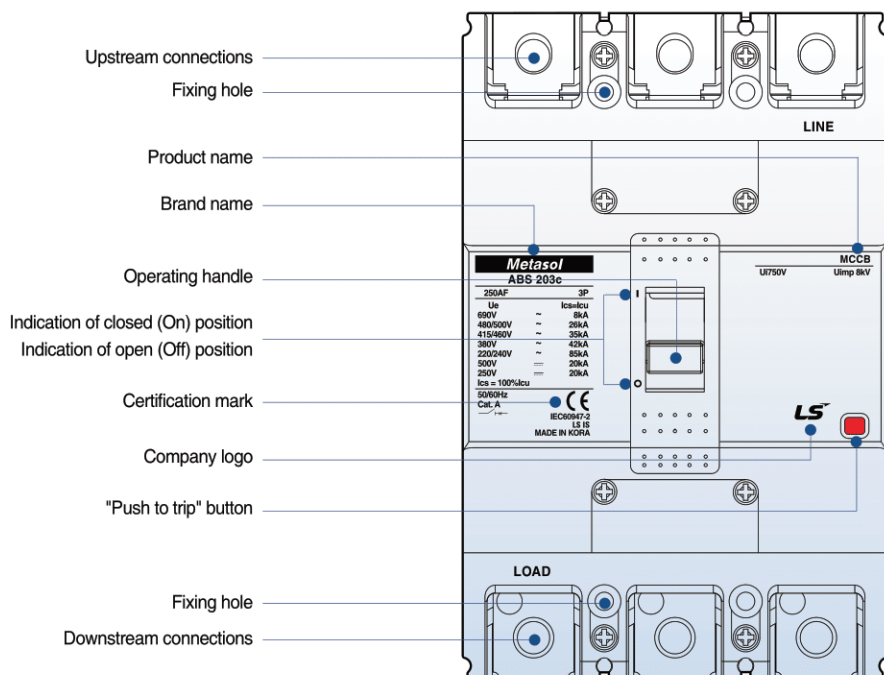
Utilization category

Manufacturer

Standard

Symbol indicating suitability for isolation as defined by IEC 947-2

## MCCB





# External configuration

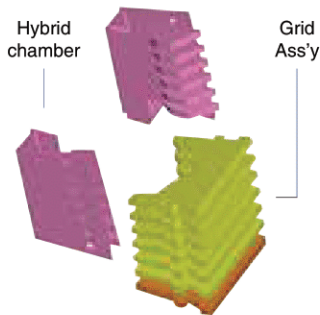
## MCCB

### ① Handle

- Function of indications
- "On" "Off" "Trip"
- Resetting  
When the handle indicates "Tripped" position it must first be reset by moving the handle to the "Off" position and then closing is possible
- Trip-free even if the handle is held at "On", the Breaker will trip if an over current flows
- Suitable for verification of the main contact position under abnormal conditions because the handle doesn't indicate open position

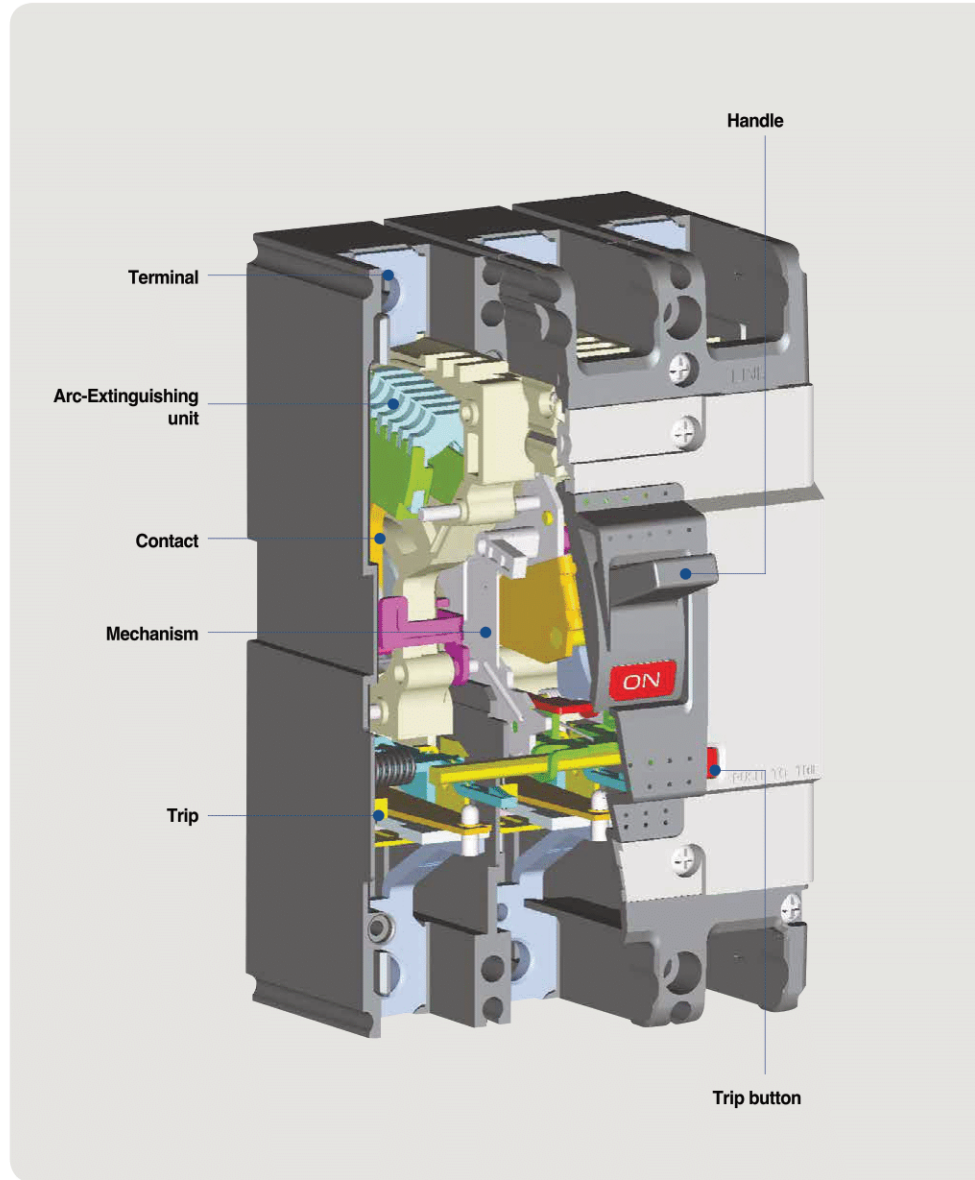
### ② Arc-Extinguishing unit

- LS patent technique PASQ
- Arc-extinguishing unit
- PASQ : Puffer assisted self-quenched
- Reduction of arc voltage for a short time

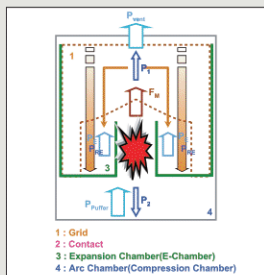


### ③ Trip button (Push to trip)

- Enables tripping mechanically from outside, for confirming the operation of the accessory switches and the manual resetting function.



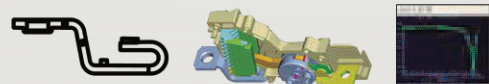
### A application of PASQ arc extinguishing



- The reduction of breaking time by applying PASQ arc extinguishing for inhibition of arc voltage for a short time.

### A application of current limiting structure

- Current limiting repulsion structure (U fixed structure)
- Toggle structure
- When the operating unit repulses by short circuit current, repulsion structure at bigger angle.



# 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 <sub>n</sub>	A	(3, 5, 10) <sup>Note 1</sup> , 15, 20, 30		15, 20, 30, 40, 50			15, 20, 30, 40, 50, 60	
Rated operational voltage, U <sub>e</sub>	AC (V)	460	690	690	690	690	690	690
	DC (V)	-	500	500	500	500	500	500
Rated insulation voltage, U <sub>i</sub>	V	460	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage, U <sub>imp</sub>	kV	6	8	8	8	8	8	8

### Rated short-circuit breaking capacity (I<sub>cu</sub>) 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 <sub>cs</sub> =% × I <sub>cu</sub>		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)

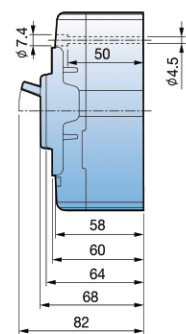
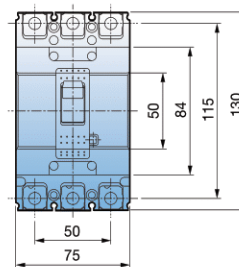
2. MCCBs can be applied to both 50 and 60Hz.

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<sub>cs</sub>(service breaking capacity) of ABN100e, ABL125/250AF are in ( )

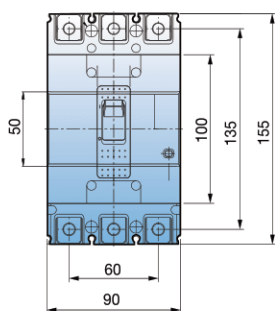
AF Type	30AF	50AF	60AF	100AF	125AF	250AF
ABN		ABN50c 14kA	ABN60c 14kA	ABN100c 18kA ABN100e 31kA		ABN250c 26kA
ABS	ABS30c 14kA	ABS50c 18kA	ABS60c 18kA		ABS125c 37kA	ABS250c 37kA
ABH		ABH50c 50kA			ABH125c 50kA	ABH250c 50kA
ABL					ABL125c 60kA	ABL250c 60kA



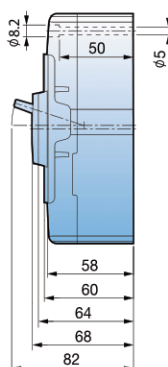
(Fig. 1)



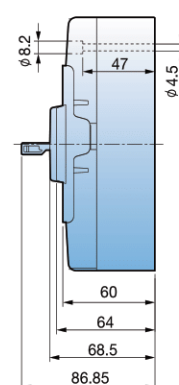
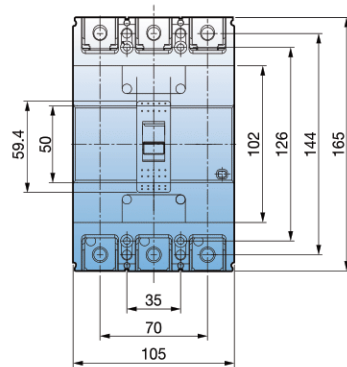
100AF		125AF			250AF			
N-type		S-type	H-type	L-type	N-type	S-type	H-type	L-type
ABN102c	ABN102e	ABS102c	ABH102c	ABL102c	ABN202c	ABS202c	ABH202c	ABL202c
ABN103c	ABN103e	ABS103c	ABH103c	ABL103c	ABN203c	ABS203c	ABH203c	ABL203c
ABN104c	ABN104e	ABS104c	ABH104c	ABL104c	ABN204c	ABS204c	ABH204c	ABL204c
15, 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 <sub>n</sub>	A	250, 300, 350, 400			
Rated operational voltage, U <sub>e</sub>	AC (V)	690	690	690	690
	DC (V)	500	500	500	500
Rated insulation voltage, U <sub>i</sub>	V	1000	1000	1000	1000
Rated impulse withstand voltage, U <sub>imp</sub>	kV	8	8	8	8

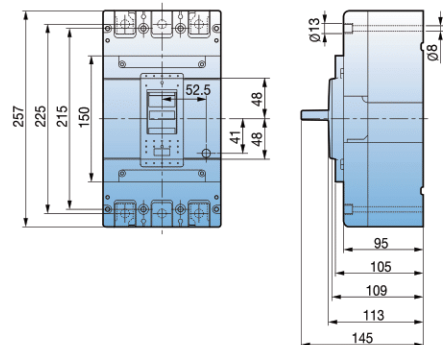
#### Rated short-circuit breaking capacity (I<sub>cu</sub>) kA (Sym) , IEC 60947-2

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 <sub>cs</sub> =% × I <sub>cu</sub>		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.

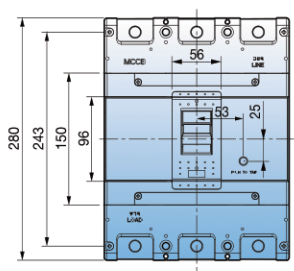
AF Type	400AF	800AF	1000AF	1200AF
ABN	ABN400c 37kA	ABN800c 37kA		
ABS	ABS400c 50kA	ABS800c 65kA	ABS1000b 65kA	ABS1200b 65kA
ABH	ABH400c 65kA			
ABL	ABL400c 85kA	ABL800c 85kA	ABL1000b 85kA	ABL1200b 85kA



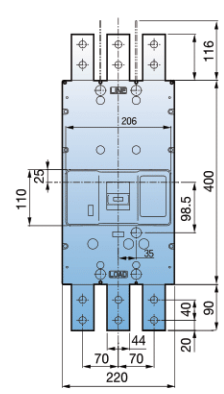
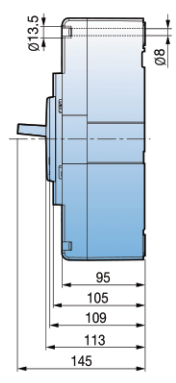
(Fig. 4)



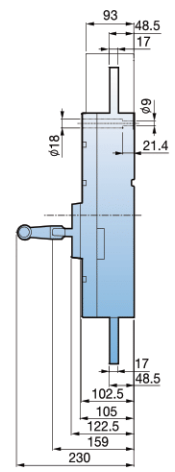
800AF			1000AF		1200AF		
N-type	S-type	L-type	S-type	L-type	S-type		L-type
ABN802c	ABS802c	ABL802c	-	-	-	-	-
ABN803c	ABS803c	ABL803c	ABS1003b	ABL1003b	ABS1203b	ABS1203bE	ABL1203b
ABN804c	ABS804c	ABL804c	ABS1004b	ABL1004b	ABS1204b	-	ABL1204b
500, 630, 700, 800			1000		1200		
690	690	690	600	600	600	600	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)



# 50AF MCCB

## ABN50c, ABS50c, ABH50c



ABS52c



ABS53c



ABS54c

### Ratings

Frame size		50AF									
<b>Type and pole</b>		<b>N-type</b>			<b>S-type</b>			<b>H-type</b>			
	2-pole	ABN52c			ABS52c			ABH52c			
	3-pole	ABN53c			ABS53c			ABH53c			
	4-pole	ABN54c			ABS54c			ABH54c			
Rated current, I <sub>n</sub>		15-20-30-40-50A									
Rated operational voltage, U <sub>e</sub>		AC: 690V									
		DC: 500V									
Rated insulation voltage, U <sub>i</sub>		AC: 1000V									
Rated impulse withstand voltage, U <sub>imp</sub>		8kV									
<b>Rated short-circuit breaking capacity, I<sub>cu</sub></b>		<b>N-type</b>			<b>S-type</b>			<b>H-type</b>			
AC	IEC 60947-2 (I <sub>cu</sub> )	690V	2.5kA	5kA	10kA						
		480/500V	7.5kA	10kA	35kA						
		460V	14kA	18kA	50kA						
		415V	14kA	18kA	50kA						
		380V	18kA	22kA	50kA						
		220/250V	30kA	35kA	100kA						
		DC	500V (3P)	5kA	10kA	30kA					
		250V (2P)	5kA	10kA	30kA						
I <sub>cs</sub> =%×I <sub>cu</sub>		100%			100%			100%			
<b>Protective function</b>		Overload, short-circuit									
Type of trip unit		Thermal-magnetic									
Magnetic trip range		12×I <sub>n</sub> (30A and under: 400A)									
Endurance	Mechanical	25,000 operations									
	Electrical	10,000 operations									
Connection	Standard	Front connection									
	Optional	Rear connection									
		Plug-in									
Mounting	Standard	Screw fixing									
<b>Dimensions (mm)</b>		Pole	2p	3p	4p	2p	3p	4p	2p	3p	4p
		a	50	75	100	50	75	100	60	90	120
		b	130			130			155		
		c1 <small>Note1</small>	60			60			60		
		c2 <small>Note1</small>	64			64			64		
		d	82			82			82		
Weight, kg		Standard	0.5	0.7	0.9	0.5	0.7	0.9	0.7	1	1.2
<b>Certification</b>		Pole	2p	3p	4p	2p	3p	4p	2p	3p	4p
CE marking		CE	○			○			○		

Note) 1. Depth by door cut size: c1 for large cut, c2 for small cut  
 2. 4-pole product's ampacity on neutral conductor is equal to or less than 50% of the rated current.

#### For more information

- Accessories ▶ 7-1 page
- Trip curves ▶ 8-1 page
- Drawings ▶ 9-2 page
- Connection and mounting ▶ 10-2 page



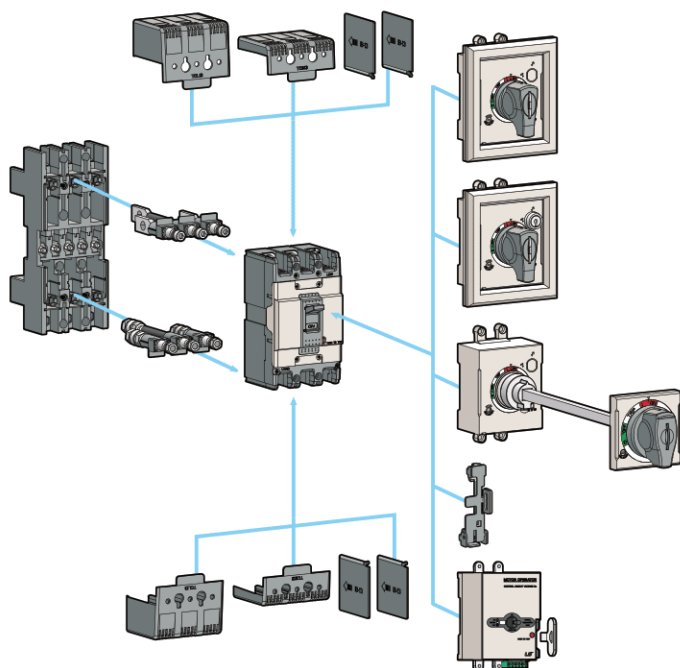
## Ordering types

### Breaker types

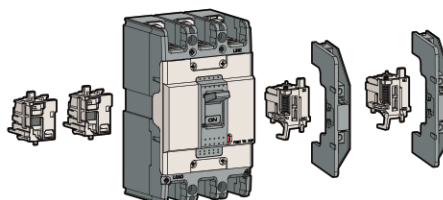
ABN type (14kA/460V)			
Rated current, In	2-pole	3-pole	4-pole
15 A	ABN52c/15	ABN53c/15	ABN54c/15
20 A	ABN52c/20	ABN53c/20	ABN54c/20
30 A	ABN52c/30	ABN53c/30	ABN54c/30
40 A	ABN52c/40	ABN53c/40	ABN54c/40
50 A	ABN52c/50	ABN53c/50	ABN54c/50

ABS type (18kA/460V)			
Rated current, In	2-pole	3-pole	4-pole
15 A	ABS52c/15	ABS53c/15	ABS54c/15
20 A	ABS52c/20	ABS53c/20	ABS54c/20
30 A	ABS52c/30	ABS53c/30	ABS54c/30
40 A	ABS52c/40	ABS53c/40	ABS54c/40
50 A	ABS52c/50	ABS53c/50	ABS54c/50

ABH type (50kA/460V)			
Rated current, In	2-pole	3-pole	4-pole
15 A	ABH52c/15	ABH53c/15	ABH54c/15
20 A	ABH52c/20	ABH53c/20	ABH54c/20
30 A	ABH52c/30	ABH53c/30	ABH54c/30
40 A	ABH52c/40	ABH53c/40	ABH54c/40
50 A	ABH52c/50	ABH53c/50	ABH54c/50



### Accessories



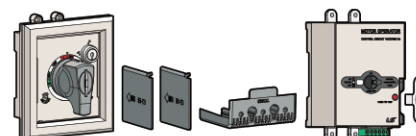
#### Electrical auxiliaries

<b>AX</b>	Auxiliary switch	
<b>AL</b>	Alarm switch	
<b>AX+AL</b>	Combination switch	
<b>SHT</b>	Shunt trip	
<b>UVT</b>	Undervoltage trip	

#### Maximum possibilities

<b>T-position</b>	One of above auxiliaries
<b>R-position</b>	Option of AX or AL or AX+AL

Note) For more detail see 7-1 page



#### External accessories

ABN50c ABS50c	ABH50c	Name
IB13	IB23	Insulation barrier
TCL13	TCL23	Terminal cover (Long) - Inde type, D-handle type, N-handle type
TCS13	TCS23	Terminal cover (Short) - Inde type, D-handle type, N-handle type
DH100	DH125	Rotary handle (Direct)
DHK100	DHK125	Rotary handle (Direct, key lock)
EH100	EH125	Rotary handle (Extended)
-	RTB2	Rear terminal (Bar)
RTR1	RTR2	Rear terminal (Round)
PB-A3	PB-C3	Plug-in kit
<b>Handle lock</b>		
MOP-M1	MOP-M2	Remote operation

Note) For more detail see 7-9 ~ 7-26 page

- Inde type: This cover is used without auxiliary handle.
- D-handle type: This cover is used with D-handle.
- N-handle type: This cover is used with N-handle.

# 60AF MCCB

## ABN60c, ABS60c



ABS62c



ABS63c



ABS64c

### Ratings

Frame size		60AF						
<b>Type and pole</b>		<b>N-type</b>			<b>S-type</b>			
	2-pole	<b>ABN62c</b>			<b>ABS62c</b>			
	3-pole	<b>ABN63c</b>			<b>ABS63c</b>			
	4-pole	<b>ABN64c</b>			<b>ABS64c</b>			
Rated current, I <sub>n</sub>		15-20-30-40-50-60A						
Rated operational voltage, U <sub>e</sub>		AC: 690V						
		DC: 500V						
Rated insulation voltage, U <sub>i</sub>		AC: 1000V						
Rated impulse withstand voltage, U <sub>imp</sub>		8kV						
<b>Rated short-circuit breaking capacity, I<sub>cu</sub></b>		<b>N-type</b>			<b>S-type</b>			
AC	IEC 60947-2 (I <sub>cu</sub> )	690V	2.5kA	5kA				
		480/500V	7.5kA	10kA				
		<b>460V</b>	<b>14kA</b>	<b>18kA</b>				
		415V	14kA	18kA				
		380V	18kA	22kA				
		<b>220/250V</b>	<b>30kA</b>	<b>35kA</b>				
DC		500V (3P)	5kA	10kA				
		250V (2P)	5kA	10kA				
I <sub>cs</sub> =%×I <sub>cu</sub>		100%			100%			
<b>Protective function</b>		Overload, short-circuit						
Type of trip unit		Thermal-magnetic						
Magnetic trip range		12×I <sub>n</sub> (30A and under: 400A)						
Endurance	Mechanical	25,000 operations						
	Electrical	10,000 operations						
Connection	Standard	Front connection						
	Optional	Rear connection						
Mounting		Plug-in						
Standard		Screw fixing						
<b>Dimensions (mm)</b>		Pole	2p	3p	4p	2p	3p	4p
		a	50	75	100	50	75	100
		b	130			130		
		c1 <small>Note1</small>	60			60		
		c2 <small>Note1</small>	64			64		
		d	82			82		
Weight, kg		Standard	0.5	0.7	0.9	0.5	0.7	0.9
<b>Certification</b>		Pole	2p			3p		
CE marking		CE	○			○		

Note) 1. Depth by door cut size: c1 for large cut, c2 for small cut  
 2. 4-pole product's ampacity on neutral conductor is equal to or less than 50% of the rated current.

#### For more information

- Accessories ▶ 7-1 page
- Trip curves ▶ 8-1 page
- Drawings ▶ 9-2 page
- Connection and mounting ▶ 10-2 page

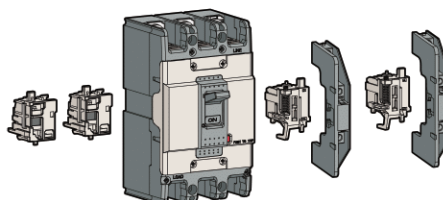
## Ordering types

### Breaker types

ABN type (14kA/460V)			
Rated current, In	2-pole	3-pole	4-pole
15 A	ABN62c/15	ABN63c/15	ABN64c/15
20 A	ABN62c/20	ABN63c/20	ABN64c/20
30 A	ABN62c/30	ABN63c/30	ABN64c/30
40 A	ABN62c/40	ABN63c/40	ABN64c/40
50 A	ABN62c/50	ABN63c/50	ABN64c/50
60 A	ABN62c/60	ABN63c/60	ABN64c/60

ABS type (18kA/460V)			
Rated current, In	2-pole	3-pole	4-pole
15 A	ABS62c/15	ABS63c/15	ABS64c/15
20 A	ABS62c/20	ABS63c/20	ABS64c/20
30 A	ABS62c/30	ABS63c/30	ABS64c/30
40 A	ABS62c/40	ABS63c/40	ABS64c/40
50 A	ABS62c/50	ABS63c/50	ABS64c/50
60 A	ABS62c/60	ABS63c/60	ABS64c/60

### Accessories



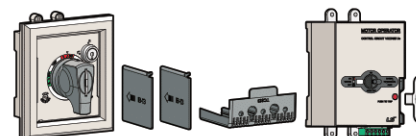
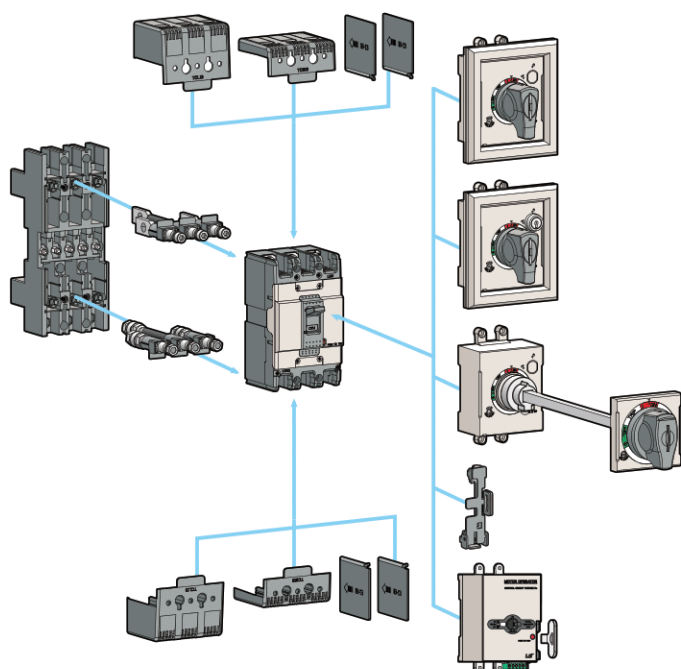
#### Electrical auxiliaries

<b>AX</b>	Auxiliary switch	
<b>AL</b>	Alarm switch	
<b>AX+AL</b>	Combination switch	
<b>SHT</b>	Shunt trip	
<b>UVT</b>	Undervoltage trip	

#### Maximum possibilities

<b>T-position</b>	One of above auxiliaries
<b>R-position</b>	Option of AX or AL or AX+AL

Note) For more detail see 7-1 page



#### External accessories

ABN50c ABS50c	Name
<b>IB13</b>	Insulation barrier
<b>TCL13</b>	Terminal cover (Long) - Inde type, D-handle type, N-handle type
<b>TCS13</b>	Terminal cover (Short) - Inde type, D-handle type, N-handle type
<b>DH100</b>	Rotary handle (Direct)
<b>DHK100</b>	Rotary handle (Direct, key lock)
<b>EH100</b>	Rotary handle (Extended)
<b>RTB1</b>	Rear terminal (Bar)
<b>RTR1</b>	Rear terminal (Round)
<b>PB-A3</b>	Plug-in kit
<b>handle lock</b>	
<b>MOP-M1</b>	Remote operation

Note) For more detail see 7-9 ~ 7-26 page

- Inde type: This cover is used without auxiliary handle.
- D-handle type: This cover is used with D-handle.
- N-handle type: This cover is used with N-handle.



# 100AF MCCB

## ABN100c, ABN100e



ABN102c



ABN103c



ABN104c

### For more information

- Accessories ▶ 7-1 page
- Trip curves ▶ 8-1 page
- Drawings ▶ 9-2 page
- Connection and mounting ▶ 10-2 page

## Ratings

Frame size		100AF			
<b>Type and pole</b>		<b>N-type</b>			
	2-pole	<b>ABN102c</b>		<b>ABN102e</b>	
	3-pole	<b>ABN103c</b>		<b>ABN103e</b>	
	4-pole	<b>ABN104c</b>		<b>ABN104e</b>	
Rated current, I <sub>n</sub>		15-20-30-40-50-60-75-100A			
Rated operational voltage, U <sub>e</sub>		AC: 690V			
		DC: 500V			
Rated insulation voltage, U <sub>i</sub>		AC: 1000V			
Rated impulse withstand voltage, U <sub>imp</sub>		8kV			
<b>Rated short-circuit breaking capacity, I<sub>cu</sub></b>		<b>N-type</b>			
	AC	690V	5kA	7.5 (5)kA	
	IEC 60947-2 (I <sub>cu</sub> )	480/500V	10kA	14 (10)kA	
		<b>460V</b>	<b>18kA</b>	<b>31 (18)kA</b>	
		415V	18kA	31 (18)kA	
		380V	22kA	31 (22)kA	
		<b>220/250V</b>	<b>35kA</b>	<b>65 (35)kA</b>	
	DC	500V (3P)	10kA	15 (10)kA	
		250V (2P)	10kA	15 (10)kA	
I <sub>cs</sub> =%×I <sub>cu</sub>		100%		( )	
<b>Protective function</b>		Overload, short-circuit			
Type of trip unit		Thermal-magnetic			
Magnetic trip range		400A			
Endurance	Mechanical	25,000 operations			
	Electrical	10,000 operations			
Connection	Standard	Front connection			
	Optional	Rear connection			
Mounting		Plug-in			
Standard		Screw fixing			
<b>Dimensions (mm)</b>		Pole	2p	3p	4p
		a	50	75	100
		b	130	130	130
		c1 <small>Note1</small>	60	60	60
		c2 <small>Note1</small>	64	64	64
		d	82	82	82
Weight, kg		Standard	0.5	0.7	0.9
<b>Certification</b>		Pole	2p	3p	4p
CE marking		CE	○	○	○

Note) 1. Depth by door cut size: c1 for large cut, c2 for small cut  
 2. 4-pole product's ampacity on neutral conductor is equal to or less than 50% of the rated current.  
 3. The I<sub>cs</sub>(Service breaking capacity) of ABN100e are in ( )

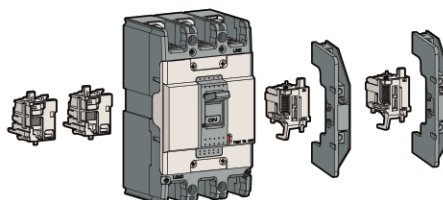
## Ordering types

### Breaker types

ABN-c type (18kA/460V)			
Rated current, In	2-pole	3-pole	4-pole
15 A	ABN102c/15	ABN103c/15	ABN104c/15
20 A	ABN102c/20	ABN103c/20	ABN104c/20
30 A	ABN102c/30	ABN103c/30	ABN104c/30
40 A	ABN102c/40	ABN103c/40	ABN104c/40
50 A	ABN102c/50	ABN103c/50	ABN104c/50
60 A	ABN102c/60	ABN103c/60	ABN104c/60
75 A	ABN102c/75	ABN103c/75	ABN104c/75
100 A	ABN102c/100	ABN103c/100	ABN104c/100

ABN-e type (31kA/460V)			
Rated current, In	2-pole	3-pole	4-pole
15 A	ABN102e/15	ABN103e/15	ABN104e/15
20 A	ABN102e/20	ABN103e/20	ABN104e/20
30 A	ABN102e/30	ABN103e/30	ABN104e/30
40 A	ABN102e/40	ABN103e/40	ABN104e/40
50 A	ABN102e/50	ABN103e/50	ABN104e/50
60 A	ABN102e/60	ABN103e/60	ABN104e/60
75 A	ABN102e/75	ABN103e/75	ABN104e/75
100 A	ABN102e/100	ABN103e/100	ABN104e/100

### Accessories



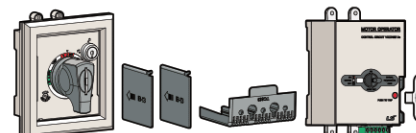
#### Electrical auxiliaries

<b>AX</b>	Auxiliary switch	
<b>AL</b>	Alarm switch	
<b>AX+AL</b>	Combination switch	
<b>SHT</b>	Shunt trip	
<b>UVT</b>	Undervoltage trip	

#### Maximum possibilities

<b>T-position</b>	One of above auxiliaries
<b>R-position</b>	Option of AX or AL or AX+AL

Note) For more detail see 7-1 page

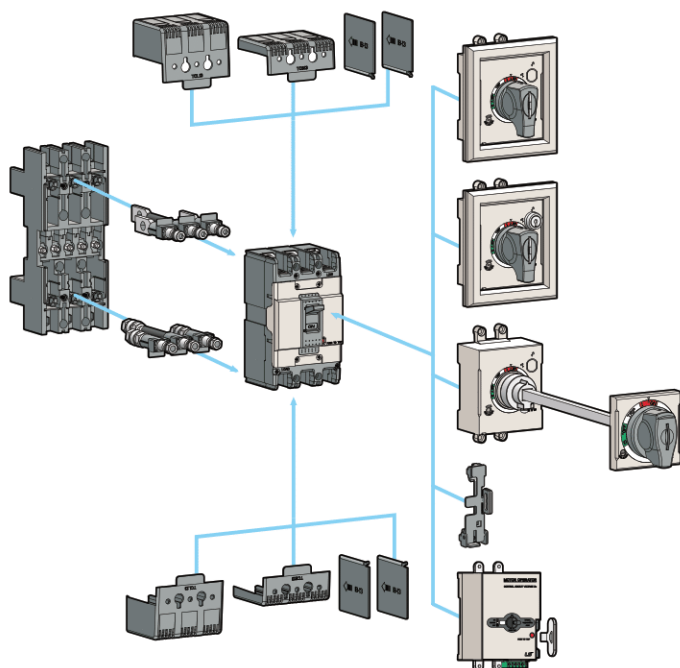


#### External accessories

ABN100c	Name
<b>IB13</b>	Insulation barrier
<b>TCL13</b>	Terminal cover (Long) - Inde type, D-handle type, N-handle type
<b>TCS13</b>	Terminal cover (Short) - Inde type, D-handle type, N-handle type
<b>DH100</b>	Rotary handle (Direct)
<b>DHK100</b>	Rotary handle (Direct, key lock)
<b>EH100</b>	Rotary handle (Extended)
<b>RTB1</b>	Rear terminal (Bar)
<b>RTR1</b>	Rear terminal (Round)
<b>PB-A3</b>	Plug-in kit
<b>Handle lock</b>	
<b>MOP-M1</b>	Remote operation

Note) For more detail see 7-9 ~ 7-26 page

- Inde type: This cover is used without auxiliary handle.
- D-handle type: This cover is used with D-handle.
- N-handle type: This cover is used with N-handle.



# 125AF MCCB

## ABS125c, ABH125c, ABL125c



ABS102c



ABS103c



ABS104c

### Ratings

Frame size		125AF									
<b>Type and pole</b>		<b>N-type</b>			<b>H-type</b>			<b>L-type</b>			
	2-pole	ABS102c			ABH102c			ABL102c			
	3-pole	ABS103c			ABH103c			ABL103c			
	4-pole	ABS104c			ABH104c			ABL104c			
Rated current, I <sub>n</sub>		15-20-30-40-50-60-75-100-125A									
Rated operational voltage, U <sub>e</sub>		AC: 690V									
		DC: 500V									
Rated insulation voltage, U <sub>i</sub>		AC: 1000V									
Rated impulse withstand voltage, U <sub>imp</sub>		8kV									
<b>Rated short-circuit breaking capacity, I<sub>cu</sub></b>		<b>N-type</b>			<b>H-type</b>			<b>L-type</b>			
AC	690V	8kA			10kA			10 (10)kA			
	480/500V	26kA			35kA			35 (35)kA			
	<b>460V</b>	<b>37kA</b>			<b>50kA</b>			<b>60 (50)kA</b>			
	415V	37kA			50kA			60 (50)kA			
	380V	42kA			50kA			60 (50)kA			
	<b>220/250V</b>	<b>85kA</b>			<b>100kA</b>			<b>125 (100)kA</b>			
	DC	500V (3P)	20kA			30kA			30 (30)kA		
	250V (2P)	20kA			30kA			30 (30)kA			
I <sub>cs</sub> =%×I <sub>cu</sub>		100%			100%			( )			
<b>Protective function</b>		Overload, short-circuit									
Type of trip unit		Thermal-magnetic									
Magnetic trip range		12 × I <sub>n</sub> (30A and under: 400A)									
Endurance	Mechanical	25,000 operations									
	Electrical	10,000 operations									
Connection	Standard	Front connection									
	Optional	Rear connection									
		Plug-in									
Mounting	Standard	Screw fixing									
<b>Dimensions (mm)</b>		Pole	2p	3p	4p	2p	3p	4p	2p	3p	4p
		a	60	90	120	60	90	120	60	90	120
		b	155			155			155		
		c1 <small>Note1</small>	60			60			60		
		c2 <small>Note1</small>	64			64			64		
		d	82			82			82		
Weight, kg		Standard	0.7	1	1.2	0.7	1	1.2	0.7	1	1.2
<b>Certification</b>		Pole	2p	3p	4p	2p	3p	4p	2p	3p	4p
CE marking		CE	○			○			○		

Note) 1. Depth by door cut size: c1 for large cut, c2 for small cut  
 2. 4-pole product's ampacity on neutral conductor is equal to or less than 50% of the rated current.  
 3. The I<sub>cs</sub>(Service breaking capacity) of ABL125AF are in ( )

#### For more information

- Accessories ▶ 7-1 page
- Trip curves ▶ 8-2 page
- Drawings ▶ 9-3 page
- Connection and mounting ▶ 10-2 page



## Ordering types

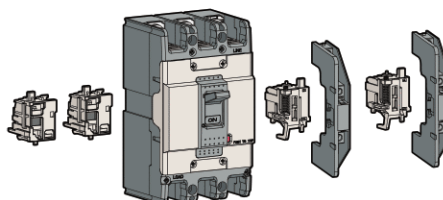
### Breaker types

ABS type (37kA/460V)			
Rated current, In	2-pole	3-pole	4-pole
15 A	ABS102c/15	ABS103c/15	ABS104c/15
20 A	ABS102c/20	ABS103c/20	ABS104c/20
30 A	ABS102c/30	ABS103c/30	ABS104c/30
40 A	ABS102c/40	ABS103c/40	ABS104c/40
50 A	ABS102c/50	ABS103c/50	ABS104c/50
60 A	ABS102c/60	ABS103c/60	ABS104c/60
75 A	ABS102c/75	ABS103c/75	ABS104c/75
100 A	ABS102c/100	ABS103c/100	ABS104c/100
125 A	ABS102c/125	ABS103c/125	ABS104c/125

ABH type (50kA/460V)			
Rated current, In	2-pole	3-pole	4-pole
15 A	ABH102c/15	ABH103c/15	ABH104c/15
20 A	ABH102c/20	ABH103c/20	ABH104c/20
30 A	ABH102c/30	ABH103c/30	ABH104c/30
40 A	ABH102c/40	ABH103c/40	ABH104c/40
50 A	ABH102c/50	ABH103c/50	ABH104c/50
60 A	ABH102c/60	ABH103c/60	ABH104c/60
75 A	ABH102c/75	ABH103c/75	ABH104c/75
100 A	ABH102c/100	ABH103c/100	ABH104c/100
125 A	ABH102c/125	ABH103c/125	ABH104c/125

ABL type (60kA/460V)			
Rated current, In	2-pole	3-pole	4-pole
15 A	ABL102c/15	ABL103c/15	ABL104c/15
20 A	ABL102c/20	ABL103c/20	ABL104c/20
30 A	ABL102c/30	ABL103c/30	ABL104c/30
40 A	ABL102c/40	ABL103c/40	ABL104c/40
50 A	ABL102c/50	ABL103c/50	ABL104c/50
60 A	ABL102c/60	ABL103c/60	ABL104c/60
75 A	ABL102c/75	ABL103c/75	ABL104c/75
100 A	ABL102c/100	ABL103c/100	ABL104c/100
125 A	ABL102c/125	ABL103c/125	ABL104c/125

### Accessories



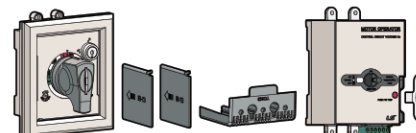
#### Electrical auxiliaries

<b>AX</b>	Auxiliary switch	
<b>AL</b>	Alarm switch	
<b>AX+AL</b>	Combination switch	
<b>SHT</b>	Shunt trip	
<b>UVT</b>	Undervoltage trip	

#### Maximum possibilities

<b>T-position</b>	One of above auxiliaries
<b>R-position</b>	Option of AX or AL or AX+AL

Note) For more detail see 7-1 page



#### External accessories

ABS125c ABH125c	Name
<b>IB13</b>	Insulation barrier
<b>TCL23</b>	Terminal cover (Long) - Inde type, D-handle type, N-handle type
<b>TCS23</b>	Terminal cover (Short) - Inde type, D-handle type, N-handle type
<b>DH125</b>	Rotary handle (Direct)
<b>DHK125</b>	Rotary handle (Direct, key lock)
<b>EH125</b>	Rotary handle (Extended)
<b>RTB2</b>	Rear terminal (Bar)
<b>RTR2</b>	Rear terminal (Round)
<b>PB-C3</b>	Plug-in kit
<b>Handle lock</b>	
<b>MOP-M2</b>	Remote operation

Note) For more detail see 7-9 ~ 7-26 page

- Inde type: This cover is used without auxiliary handle.
- D-handle type: This cover is used with D-handle.
- N-handle type: This cover is used with N-handle.

# 250AF MCCB

## ABN250c, ABS250c, ABH250c, ABL250c



ABS202c



ABS203c



ABS204c

### For more information

- Accessories ▶ 7-1 page
- Trip curves ▶ 8-3 page
- Drawings ▶ 9-4 page
- Connection and mounting ▶ 10-2 page

## Ratings

Frame size		250AF													
<b>Type and pole</b>		<b>N-type</b>			<b>S-type</b>			<b>H-type</b>			<b>L-type</b>				
2-pole		ABN202c			ABS202c			ABH202c			ABL202c				
3-pole		ABN203c			ABS203c			ABH203c			ABL203c				
4-pole		ABN204c			ABS204c			ABH204c			ABL204c				
Rated current, I <sub>n</sub>		100-125-150-175-200-225-250A													
Rated operational voltage, U <sub>e</sub>		AC: 690V													
		DC: 500V													
Rated insulation voltage, U <sub>i</sub>		AC: 1000V													
Rated impulse withstand voltage, U <sub>imp</sub>		8kV													
<b>Rated short-circuit breaking capacity, I<sub>cu</sub></b>		<b>N-type</b>			<b>S-type</b>			<b>H-type</b>			<b>L-type</b>				
AC 690V		8kA			8kA			10kA			10 (10)kA				
IEC 60947-2 (I <sub>cu</sub> )		480/500V			18kA			26kA			35 (35)kA				
		460V			26kA			37kA			60 (50)kA				
		415V			26kA			37kA			60 (50)				
		380V			30kA			42kA			60 (50)				
		220/250V			65kA			85kA			125 (100)kA				
DC 500V (3P)		10kA			20kA			30kA			30 (30)kA				
250V (2P)		10kA			20kA			30kA			30 (30)kA				
I <sub>cs</sub> =%×I <sub>cu</sub>		100%			100%			100%			( )				
<b>Protective function</b>		Overload, short-circuit													
Type of trip unit		Thermal-magnetic													
Magnetic trip range		12×I <sub>n</sub>													
Endurance		Mechanical			25,000 operations										
		Electrical			10,000 operations										
Connection		Standard			Front connection										
		Optional			Rear connection										
		Plug-in													
Mounting		Standard			Screw fixing										
<b>Dimensions (mm)</b>		Pole		2p	3p	4p	2p	3p	4p	2p	3p	4p	2p	3p	4p
		a		60	90	120	690	120	140	105	105	140	105	105	140
		b		155			155			165			165		
		c1 <small>Note1</small>		60			60			60			60		
		c2 <small>Note1</small>		64			64			64			64		
		d		82			82			87			87		
Weight, kg		Standard		0.7	1	1.2	0.7	1	1.2	1.1	1.2	1.6	1.1	1.2	1.6
<b>Certification</b>		Pole		2p	3p	4p	2p	3p	4p	2p	3p	4p	2p	3p	4p
CE marking		CE		○			○			○			○		

Note) 1. Depth by door cut size: c1 for large cut, c2 for small cut  
 2. 4-pole product's ampacity on neutral conductor is equal to or less than 50% of the rated current.  
 3. The I<sub>cs</sub>(Service breaking capacity) of ABL250AF are in ( )

## Ordering types

### Breaker types

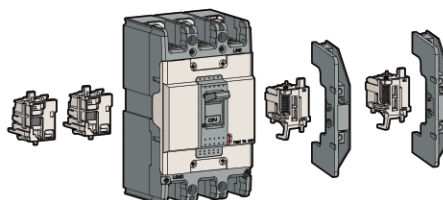
ABN type (26kA/460V)			
Rated current, In	2-pole	3-pole	4-pole
100 A	ABN202c/100	ABN203c/100	ABN204c/100
125 A	ABN202c/125	ABN203c/125	ABN204c/125
150 A	ABN202c/150	ABN203c/150	ABN204c/150
175 A	ABN202c/175	ABN203c/175	ABN204c/175
200 A	ABN202c/200	ABN203c/200	ABN204c/200
225 A	ABN202c/225	ABN203c/225	ABN204c/225
250 A	ABN202c/250	ABN203c/250	ABN204c/250

ABS type (37kA/460V)			
Rated current, In	2-pole	3-pole	4-pole
100 A	ABS202c/100	ABS203c/100	ABS204c/100
125 A	ABS202c/125	ABS203c/125	ABS204c/125
150 A	ABS202c/150	ABS203c/150	ABS204c/150
175 A	ABS202c/175	ABS203c/175	ABS204c/175
200 A	ABS202c/200	ABS203c/200	ABS204c/200
225 A	ABS202c/225	ABS203c/225	ABS204c/225
250 A	ABS202c/250	ABS203c/250	ABS204c/250

ABH type (50kA/460V)			
Rated current, In	2-pole	3-pole	4-pole
100 A	ABH202c/100	ABH203c/100	ABH204c/100
125 A	ABH202c/125	ABH203c/125	ABH204c/125
150 A	ABH202c/150	ABH203c/150	ABH204c/150
175 A	ABH202c/175	ABH203c/175	ABH204c/175
200 A	ABH202c/200	ABH203c/200	ABH204c/200
225 A	ABH202c/225	ABH203c/225	ABH204c/225
250 A	ABH202c/250	ABH203c/250	ABH204c/250

ABL type (60kA/460V)			
Rated current, In	2-pole	3-pole	4-pole
100 A	ABL202c/100	ABL203c/100	ABL204c/100
125 A	ABL202c/125	ABL203c/125	ABL204c/125
150 A	ABL202c/150	ABL203c/150	ABL204c/150
175 A	ABL202c/175	ABL203c/175	ABL204c/175
200 A	ABL202c/200	ABL203c/200	ABL204c/200
225 A	ABL202c/225	ABL203c/225	ABL204c/225
250 A	ABL202c/250	ABL203c/250	ABL204c/250

### Accessories



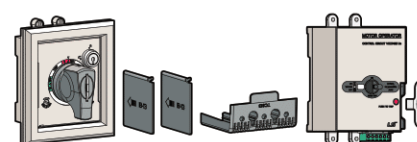
#### Electrical auxiliaries

<b>AX</b>	Auxiliary switch	
<b>AL</b>	Alarm switch	
<b>AX+AL</b>	Combination switch	
<b>SHT</b>	Shunt trip	
<b>UVT</b>	Undervoltage trip	

#### Maximum possibilities

<b>T-position</b>	One of above auxiliaries
<b>R-position</b>	Option of AX or AL or AX+AL

Note) For more detail see 7-1 page



#### External accessories

ABH250c	Name
<b>B33</b>	Insulation barrier
<b>TCL33</b>	Terminal cover (Long) - Inde type, D-handle type, N-handle type
<b>TCS33</b>	Terminal cover (Short) - Inde type, D-handle type, N-handle type
<b>DH250</b>	Rotary handle (Direct)
<b>DHK250</b>	Rotary handle (Direct, key lock)
<b>EH250</b>	Rotary handle (Extended)
<b>RTB3</b>	Rear terminal (Bar)
<b>RTR3</b>	Rear terminal (Round)
<b>PBA250C</b>	Plug-in kit
<b>Handle lock</b>	
<b>MOP-M3</b>	Remote operation

Note) For more detail see 7-9 ~ 7-26 page

- Inde type: This cover is used without auxiliary handle.
- D-handle type: This cover is used with D-handle.
- N-handle type: This cover is used with N-handle.



# 400AF MCCB

## ABN400c, ABS400c, ABH400c, ABL400c



ABS403c



ABL404c

### Ratings

Frame size		400AF											
<b>Type and pole</b>		<b>N-type</b>			<b>S-type</b>			<b>H-type</b>			<b>L-type</b>		
2-pole		ABN402c			ABS402c			ABH402c			ABL402c		
3-pole		ABN403c			ABS403c			ABH403c			ABL403c		
4-pole		ABN404c			ABS404c			ABH404c			ABL404c		
Rated current, I <sub>n</sub>		250-300-350-400A											
Rated operational voltage, U <sub>e</sub>		AC: 690V											
		DC: 500V											
Rated insulation voltage, U <sub>i</sub>		AC: 1000V											
Rated impulse withstand voltage, U <sub>imp</sub>		8kV											
<b>Rated short-circuit breaking capacity, I<sub>cu</sub></b>		<b>N-type</b>			<b>S-type</b>			<b>H-type</b>			<b>L-type</b>		
AC 690V		5kA			8kA			10kA			14kA		
IEC 60947-2 (I <sub>cu</sub> )		480/500V			18kA			35kA			50kA		
		415/460V			37kA			50kA			65kA		
		380V			42kA			65kA			70kA		
		220/250V			50kA			75kA			85kA		
DC 500V (3P)		10kA			20kA			40kA			40kA		
250V (2P)		10kA			20kA			40kA			40kA		
I <sub>cs</sub> =%×I <sub>cu</sub>		100%			100%			100%			75		
<b>Protective function</b>		Overload, short-circuit											
Type of trip unit		Thermal-magnetic											
Magnetic trip range		8~12I <sub>n</sub>											
Endurance		Mechanical			4,000 operations								
		Electrical			1,000 operations								
Connection		Standard			Front connection								
		Optional			Plug-in								
Mounting		Standard			Screw fixing								
<b>Dimensions (mm)</b>		Pole			2p			3p			4p		
		a			140			140			184		
		b			257			257			257		
		c1 (Note)			109			109			109		
		c2 (Note)			113			113			113		
		d			145			145			145		
Weight, kg		Standard			5.2			6.2			7.8		
<b>Certification</b>		Pole			2p			3p			4p		
CE marking		CE			○			○			○		

Note) 1. Depth by door cut size: c1 for large cut, c2 for small cut  
 2. 4-pole product's ampacity on neutral conductor is equal to or less than 50% of the rated current.

#### For more information

- Accessories ▶ 7-2 page
- Trip curves ▶ 8-4 page
- Drawings ▶ 9-5 page
- Connection and mounting ▶ 10-3 page

## Ordering types

### Breaker types

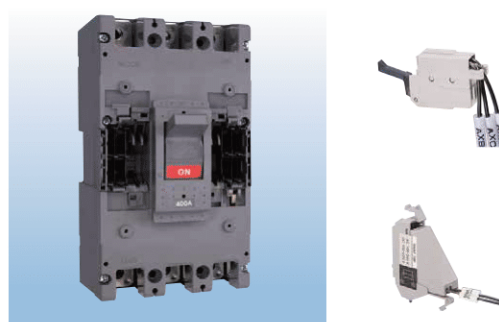
ABN type (37kA/460V)			
Rated current, In	2-pole	3-pole	4-pole
250 A	ABN402c/250	ABN403c/250	ABN404c/250
300 A	ABN402c/300	ABN403c/300	ABN404c/300
350 A	ABN402c/350	ABN403c/350	ABN404c/350
400 A	ABN402c/400	ABN403c/400	ABN404c/400

ABS type (50kA/460V)			
Rated current, In	2-pole	3-pole	4-pole
250 A	ABS402c/250	ABS403c/250	ABS404c/250
300 A	ABS402c/300	ABS403c/300	ABS404c/300
350 A	ABS402c/350	ABS403c/350	ABS404c/350
400 A	ABS402c/400	ABS403c/400	ABS404c/400

ABH type (65kA/460V)			
Rated current, In	2-pole	3-pole	4-pole
250 A	ABH402c/250	ABH403c/250	ABH404c/250
300 A	ABH402c/300	ABH403c/300	ABH404c/300
350 A	ABH402c/350	ABH403c/350	ABH404c/350
400 A	ABH402c/400	ABH403c/400	ABH404c/400

ABL type (85kA/460V)			
Rated current, In	2-pole	3-pole	4-pole
250 A	ABL402c/250	ABL403c/250	ABL404c/250
300 A	ABL402c/300	ABL403c/300	ABL404c/300
350 A	ABL402c/350	ABL403c/350	ABL404c/350
400 A	ABL402c/400	ABL403c/400	ABL404c/400

### Accessories



#### Electrical auxiliaries

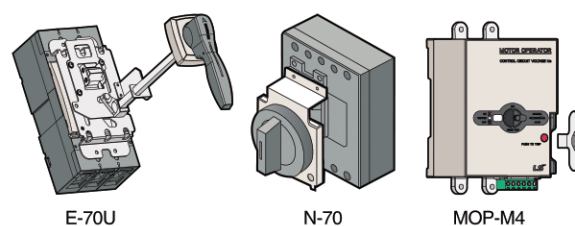
<b>AX</b>	Auxiliary switch
<b>AL</b>	Alarm switch
<b>SHT</b>	Shunt trip
<b>UVT</b>	Undervoltage trip



#### Maximum possibilities

<b>T-position</b>	Option of 2AX, 2AL and SHT or UVT
<b>R-position</b>	Option of 2AX, 2AL and SHT or UVT

Note) For more detail see 7-2 page



#### External accessories

<b>IBL400</b>	Insulation barrier
<b>T1-43A</b>	Terminal cover (Long) - 2, 3pole
<b>T1-44A</b>	Terminal cover (Long) - 4pole
<b>N-70</b>	Rotary handle (Direct)
<b>E-70U</b>	Rotary handle (Extended)
<b>MI-43</b>	Mechanical interlock - 2, 3pole
<b>MI-44</b>	Mechanical interlock - 4pole
<b>PB-I3-FR</b>	Plug-in kit
<b>MOP-M4</b>	Remote operation

Note) For more detail see 7-9 ~ 7-26 page

# 800AF MCCB

## ABN800c, ABS800c, ABL800c



ABS803c



ABL804c

### Ratings

Frame size		800AF									
<b>Type and pole</b>		<b>N-type</b>			<b>S-type</b>			<b>L-type</b>			
	2-pole	ABN802c			ABS802c			ABL802c			
	3-pole	ABN803c			ABS803c			ABL803c			
	4-pole	ABN804c			ABS804c			ABL804c			
Rated current, I <sub>n</sub>		500-630-700-800A									
Rated operational voltage, U <sub>e</sub>		AC: 690V									
		DC: 500V									
Rated insulation voltage, U <sub>i</sub>		AC: 1000V									
Rated impulse withstand voltage, U <sub>imp</sub>		8kV									
<b>Rated short-circuit breaking capacity, I<sub>cu</sub></b>		<b>N-type</b>			<b>S-type</b>			<b>L-type</b>			
AC	IEC 60947-2 (I <sub>cu</sub> )	690V	8kA	10kA	14kA						
		480/500V	25kA	45kA	65kA						
		415/460V	37kA	65kA	85kA						
		380V	45kA	75kA	100kA						
		220/250V	50kA	85kA	125kA						
DC		500V (3P)	10kA	20kA	40kA						
		250V (2P)	10kA	20kA	40kA						
I <sub>cs</sub> =%×I <sub>cu</sub>		100%			100%			75%			
<b>Protective function</b>		Overload, short-circuit									
Type of trip unit		Thermal-magnetic									
Magnetic trip range		8~12I <sub>n</sub>									
Endurance	Mechanical	2,500 operations									
	Electrical	500 operations									
Connection	Standard	Front connection									
	Optional	Plug-in									
Mounting		Standard									
<b>Dimensions (mm)</b>		Screw fixing									
	Pole	2p	3p	4p	2p	3p	4p	2p	3p	4p	
	a	210	210	280	210	210	280	210	210	280	
	b		280			280			280		
	c1 <small>Note1</small>		109			109			109		
	c2 <small>Note1</small>		113			113			113		
	d		145			145			145		
Weight, kg		Standard	11	11.5	18.2	11	11.5	18.2	11	11.5	18.2
<b>Certification</b>		Pole	2p	3p	4p	2p	3p	4p	2p	3p	4p
CE marking		CE		○			○			○	

Note) 1. Depth by door cut size: c1 for large cut, c2 for small cut  
 2. 4-pole product's ampacity on neutral conductor is equal to or less than 50% of the rated current.

#### For more information

- Accessories ▶ 7-2 page
- Trip curves ▶ 8-4 page
- Drawings ▶ 9-6 page
- Connection and mounting ▶ 10-3 page