

Meta-MEC  
**LOW VOLTAGE CIRCUIT BREAKERS**

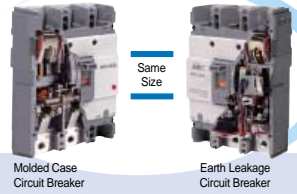


Electric Equipment



**LG Industrial Systems**

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## General chart

### Molded Case Circuit Breakers, MCCBs

Type	AF	30AF	50AF	60AF	100AF	225AF	250AF	400AF	800AF	1200AF	1600AF
ABE			ABE53b 5kA	ABE63b 5kA	ABE103b 10kA	ABE203b 18kA		ABE403b 25kA	ABE803b 35kA		
ABS		ABS33b 5kA	ABS53b 10kA	ABS63b 10kA	ABS103b 25kA	ABS203b 25kA		ABS403b 35kA	ABS803b 50kA	ABS1203 65kA	
ABH		ABH33b 10kA	ABH53b 25kA		ABH103b 35kA	ABH203b 35kA		ABH403b 50kA			
ABL								ABL403b 85kA	ABL803b 85kA		
GB Thermal-magnetic adjustable					GBN103 35kA		GBN203 35kA				
					GBH103 50kA		GBH203 50kA				
					GBL103 85kA		CBL203 85kA				
GB Electronic adjustable							GBN403E 35kA	GBN803E 35kA			
							GBH403E 50kA	GBH803E 50kA			
									ABS1203E 65kA	GBN1603E 65kA	
			GBL53E 85kA		GBL103E 85kA		GBL203E 85kA				

- by three-pole type, ampere frame and breaking capacity at 415VAC.

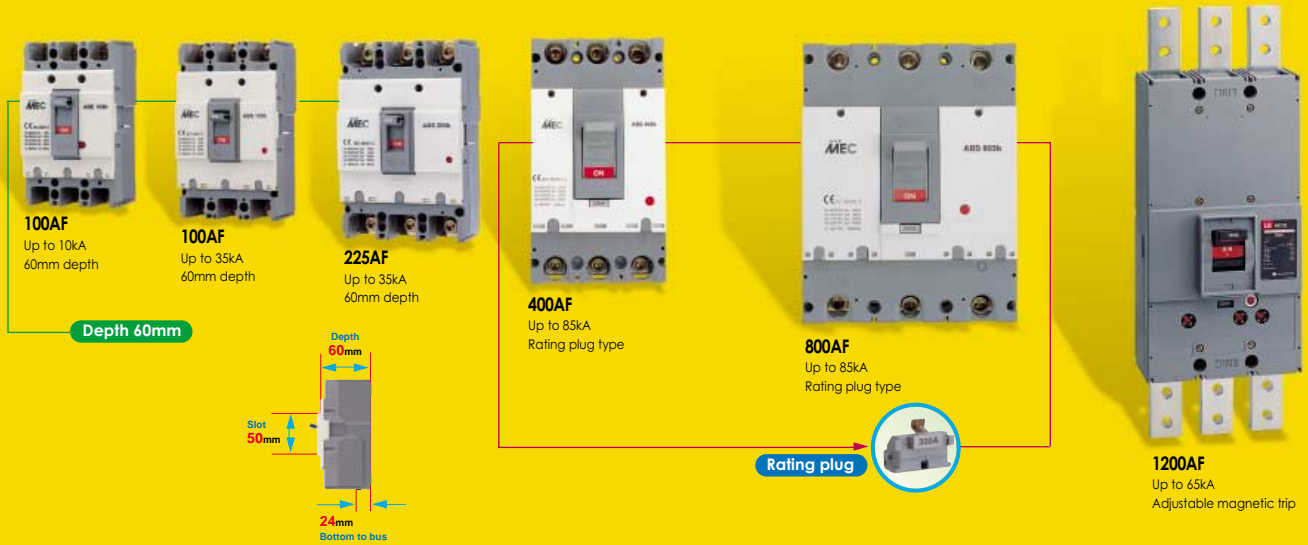
### Earth Leakage Circuit Breakers, ELCBs

Type	AF	30AF	50AF	60AF	100AF	225AF	250AF	400AF	800AF	1200AF
EBE			EBE53b 5kA	EBE63b 5kA	EBE103b 10kA	EBE203b 18kA		EBE403b 25kA	EBE803b 35kA	
EBS		EBS33b 5kA	EBS53b 10kA	EBS63b 10kA	EBS103b 25kA	EBS203b 25kA		EBS403b 35kA	EBS803b 50kA	
EBH		EBH33b 10kA	EBH53b 25kA		EBH103b 35kA	EBH203b 35kA				
EBL								EBL403b 85kA	EBL803b 85kA	

- by three-pole type, ampere frame and breaking capacity at 415VAC.

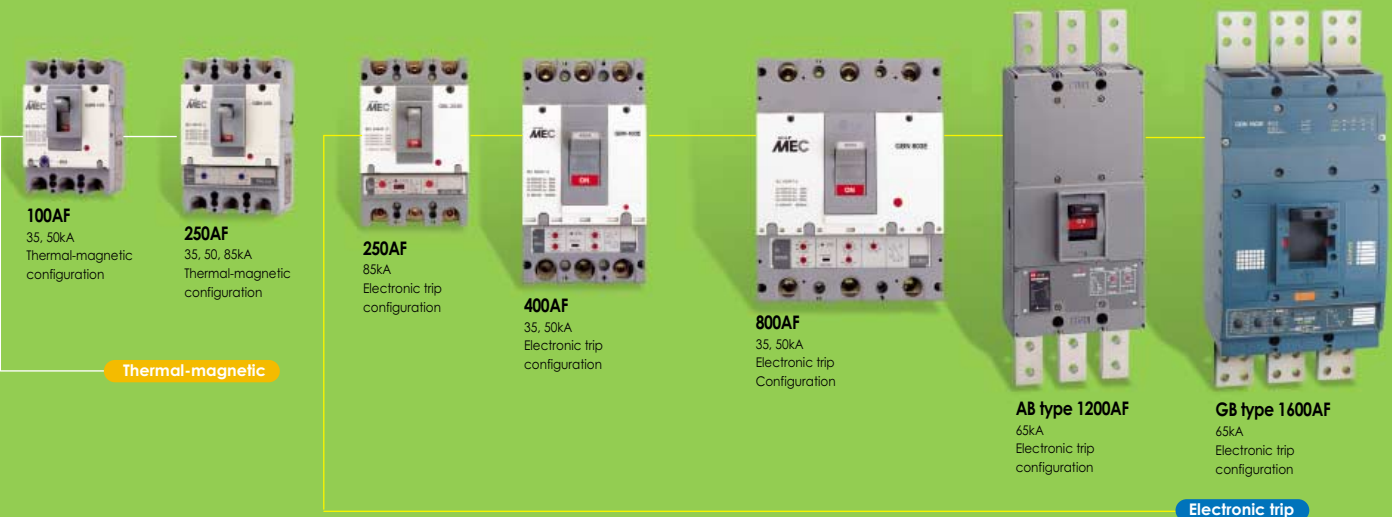
## AB type MCCBs

5 to 1200 Amp

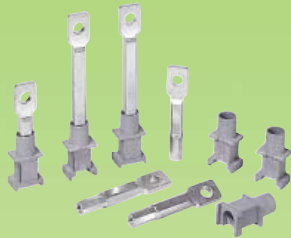


## GB type adjustable MCCBs

16 to 1600 Amp



Meta-MEC MCCB offers more accessories for varied applications and allows easy access to install them, especially for the electrical auxiliaries.



### Electrical auxiliaries



Auxiliary switch, AX



Alarm switch, AL



Shunt trip, SHT



Under voltage trip, UVT

### Operating handle

Handle position clearly indicates the tripping of the breaker.



ON Trip Off

Breaker handle and face plate shall indicate rated capacity

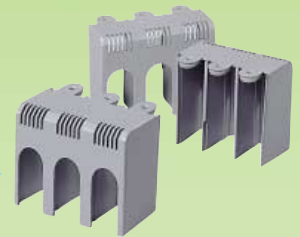
All operating mechanisms are of the quick-make, quick-break type and are "trip free"

Mechanical interlock between two breakers

Key-lock built-in types are available.



### Rear connection kits



### Terminal shields

### Manual rotary handles



Direct or extensible mounting

Push-to-trip button to exercise the trip mechanism manually

### Trip units

One of three kinds is built in each breaker

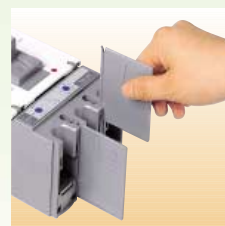
- Thermal-magnetic
- Electronic
- Hydraulic-magnetic

Configurations ; I, LI, LSI, LSIA,

Breakers shall have common tripping of all poles.

Thermal elements shall be factory calibrated to operate in a 40°C ambient environment.

Breakers for 50°C are available on request.



### Insulation barriers

- supplied as standard for line side
- optional for load side.

# Selection table

Frame size(AF)		30			50		
Frame Type		ABS	ABH	ABE	ABS	ABH	GBL(E)
Breaking capacity(kA), Icu at 415Vac		5	10	5	10	25	85
Number of poles		2, 3	2, 3	2, 3	2, 3, 4	2, 3, 4	3
Type	2 pole	ABS32b	ABH32b	ABE52b	ABS52b	ABH52b	
	3 pole	ABS33b	ABH33b	ABE53b	ABS53b	ABH53b	GBL53E
	4 pole				ABS54b	ABH54b	
Rated current (A)		(3), 5, 10,	5, 10,		5, 10, 15,	15, 20,	50
In at 40 °C		15, 20, 30	15, 20, 30		20, 30, 40, 50	30, 40, 50	Electronically adjustable : (0.5-0.6-0.7-0.8 -0.9-1.0) x In
<b>Technical data conforming to IEC / EN60947-2</b>							
Rated operational voltage(V), Ue(50 / 60Hz)		600	600	600	600	600	600
Rated operational voltage(V), Ue(DC)		250	250	250	250	250	-
Rated insulation voltage(V), Ui(50 / 60Hz)		690	690	690	690	690	690
Rated impulse withstand voltage(kV), Uimp		6	6	6	6	6	6
Ultimate breaking capacity(kA), Icu	220 / 240V	10	25	10	25	50	125
	380	7.5	14	7.5	14	25	85
	415V	5	10	5	10	25	85
AC 50 / 60Hz	440 / 460V	5	10	5	10	25	85
	480 / 500V	2.5	7.5	2.5	7.5	14	65 / 50
	600V	2.5	5	2.5	5	10	35
	690V	-	-	-	-	-	-
DC	125V	5	10	5	10	20	-
	250V	2.5	5	2.5	5	14	-
Service breaking capacity(%Icu), Ics		50	50	50	50	50	75
Category of use		A	A	A	A	A	A
Endurance (number of operations)	mechanical	8500	8500	8500	8500	8500	10000
	electrical	1500	1500	1500	1500	1500	5000
<b>Type of trip unit</b>							
Thermal-magnetic release						fixed	
Electronic release							LSIA configuration
Pre-alarm via LED							●
Hydraulic-magnetic release		fixed	fixed	fixed	fixed		
Magnetic release only (without thermal trip)							
Earth leakage protection for 3 pole		▲	▲	▲	▲	▲	
<b>Accessories</b>							
Electrical auxiliaries	Auxiliary switch	●	●	●	●	●	●
	Alarm switch	●	●	●	●	●	●
	Shunt trip	●	●	●	●	●	●
	Undervoltage trip	●	●	●	●	●	●
External accessories	Direct rotary handle	●	●	●	●	●	●
	Extended rotary handle	●	●	●	●	●	●
	Terminal shield	●	●	●	●	●	●
	Insulation barrier	●	●	●	●	●	●
	Rear connection	●	●	●	●	●	●
	Mechanical interlock	-	-	-	-	-	-
	Plug-in device	-	-	-	-	-	-
	Motor operator	-	-	-	-	-	-
Dimensions (mm)	3 pole breaker	see Fig. 1		see Fig. 1		see Fig. 2	see Fig. 5
Weight(kg)	2 pole	0.45	0.45	0.45	0.45	0.7	1.7
	3 pole	0.65	0.65	0.65	0.65	1	1.7
	4 pole				0.85	1.2	

- Note) 1. ● applicable or available  
 2. ▲ available as a separate breaker  
 3. (3) Breaking capacity(at 415VAC) of  
 ABS32b 3A ABS33b 3A is 2.5kA

Fig. 1

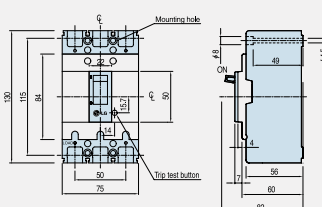
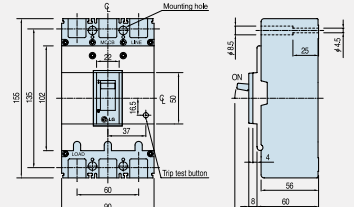


Fig. 2





60				100				
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ABE	ABS	ABE	ABS	ABH	GBN	GBH	GBL	GBL(E)	
5	10	10	25	35	35	50	85	85	
2, 3	2, 3, 4	2, 3, 4	2, 3, 4	2, 3, 4	2, 3, 4	2, 3, 4	2, 3, 4	3	
ABE62b	ABS62b	ABE102b	ABS102b	ABH102b	GBN102	GBH102	GBL102		
ABE63b	ABS63b	ABE103b	ABS103b	ABH103b	GBN103	GBH103	GBL103	GBL103E	
	ABS64b	ABE104b	ABS104b	ABH104b	GBN104	GBH104	GBL104		
60		5, 10, 15, 20, 30, 40, 50, 60, 75, 100	15, 20, 30, 40, 50, 60, 75, 100		16, 20, 25, 32, 40, 50, 63, 80, 100 Thermally adjustable; (0.8- 0.9-1.0) × I <sub>n</sub>			100 Electronically adjustable : (0.5-0.6-0.7- 0.8 -0.9-1.0) × I <sub>n</sub>	

600	600	600	600	600	600	600	600	600
250	250	250	250	250	250	250	250	-
690	690	690	690	690	690	690	690	690
6	6	6	6	6	6	6	6	6
10	25	25	50	65	50	85	125	125
7.5	14	14	25	35	35	50	85	85
5	10	10	25	35	35	50	85	85
5	10	10	25	35	35	50	85	85
2.5	7.5	7.5	14	25	30 / 22	42 / 35	65 / 50	65 / 50
2.5	5	5	10	18	18	25	35	35
-	-	-	-	-	-	-	-	-
5	10	10	20	25	-	-	-	-
2.5	5	5	14	18	35	50	85	-
50	50	50	50	50	75	75	75	75
A	A	A	A	A	A	A	A	A
8500	8500	8500	8500	8500	20000	20000	10000	10000
1500	1500	1500	1500	1500	10000	10000	5000	5000

			fixed	fixed	Adjustable-thermal, Fixed-magnetic			LSIA configuration
								●
fixed	fixed	fixed						
▲	▲	▲	▲	▲		▲		

●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	※	※	※	※
see Fig. 1	see Fig. 1	see Fig. 1	see Fig. 2	see Fig. 2	see Fig. 4		see Fig. 5	see Fig. 5
0.45	0.45	0.45	0.7	0.7	1.1	1.1	1.5	
0.65	0.65	0.65	1.1	1.1	1.2	1.2	1.7	1.7
	0.85	0.85	1.2	1.2	1.5	1.5	2.1	

Fig. 3

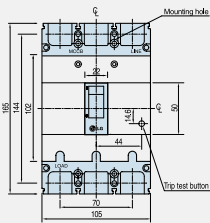


Fig. 4

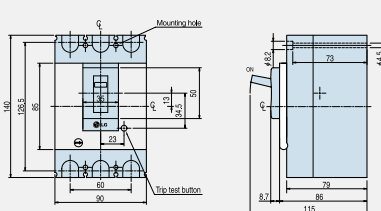
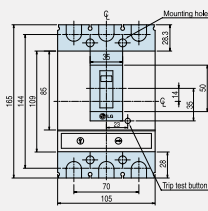


Fig. 5





225			250				400		
ABE	ABS	ABH	GBN	GBH	GBL	GBL(E)	ABE	ABS	ABH
18	25	35	35	50	85	85	25	35	50
2, 3, 4	2, 3, 4	2, 3, 4	2, 3, 4	2, 3, 4	2, 3, 4	3	2, 3, 4	2, 3, 4	2, 3, 4
ABE202b	ABS202b	ABH202b	GBN202	GBH202	GBL202		ABE402b	ABS402b	ABH402b
ABE203b	ABS203b	ABH203b	GBN203	GBH203	GBL203	GBL203E	ABE403b	ABS403b	ABH403b
ABE204b	ABS204b	ABH204b	GBN204	GBH204	GBL204		ABE404b	ABS404b	ABH404b
	100, 125, 150, 175, 200, 225					250 Electronically adjustable :(0.5-0.6-0.7-0.8 -0.9-1.0) × In		250, 300, 350, 400 Interchangeable via rating plug between 250 and 300 350 and 400	
600	600	600	600	600	600	600	600	600	600
250	250	250	250	250	250	-	250	250	250
690	690	690	690	690	690	690	690	690	690
6	6	6	6	6	6	6	6	6	6
35	50	65	50	85	125	125	35	50	85
18	25	35	35	50	85	85	30	42	65
18	25	35	35	50	85	85	25	35	50
18	25	35	35	50	85	85	25	35	50
10	14	25	30/22	42 / 35	65 / 50	65 / 50	18	25	35
7.5	10	18	18	25	35	35	18	22	25
-	-	-	-	-	-	-	-	-	-
15	20	25	-	-	-	-	20	30	50
10	14	18	35	50	85	-	10	20	40
50	50	50	75	75	75	75	100	100	50
A	A	A	A	A	A	A	A	A	A
7000	7000	7000	10000	10000	10000	10000	4000	4000	4000
1000	1000	1000	5000	5000	5000	5000	1000	1000	1000
fixed	fixed	fixed	Adjustable-thermal & magnetic				fixed	fixed	fixed
						LSIA configuration			
						●			
			▲	▲	▲		▲	▲	▲
▲	▲	▲					▲	▲	▲
●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●
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●	●	●	●	●	●	●	●	●	●
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-	-	-	-	-	-	-	●	●	●
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-	-	-	-	-	-	-	-	-	-
	see Fig. 3		see Fig. 5						see Fig. 6
1.1	1.1	1.1	1.5	1.5	1.5		5.2	5.2	5.2
1.2	1.2	1.2	1.7	1.7	1.7	1.7	6.2	6.2	6.2
1.5	1.5	1.5	2.1	2.1	2.1		7.8	7.8	7.8

Fig. 6

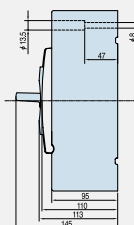
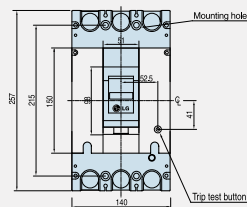
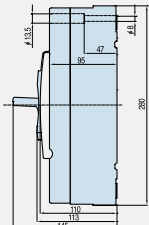
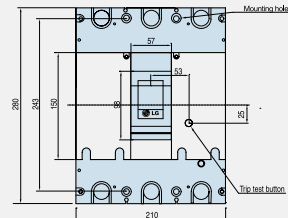


Fig. 7





		800					1200		1600	
GBN(E)	GBH(E)	ABE	ABS	ABL	GBN(E)	GBH(E)	ABS	ABS(Electronic Trip)	GBN(E)	
35	50	35	50	85	35	50	65	65	65	
3	3	2, 3, 4	2, 3, 4	2, 3, 4	3	3	3, 4	3	3	
		ABE802b	ABS802b	ABL802b						
GBN403E	GBH403E	ABE803b	ABS803b	ABL803b	GBN803E	GBH803E	ABS1003	ABS1203	ABS1203E	GBN1603E
		ABE804b	ABS804b	ABL804b			ABS1004	ABS1204		
400		500, 600, 630, 700, 800			800		1000		1200	1600
Electronically adjustable : (0.5-0.6-0.7-0.8-0.9-1.0) × In		Interchangeable via rating plug between 500 and 600, 500 and 630, 700 and 800			Electronically adjustable : (0.5-0.6-0.7-0.8-0.9-1.0) × In				Electronically adjustable: (0.5-0.6-0.7-0.8-0.9-1.0) × In	
600	600	600	600	600	600	600	600	600	600	
-	-	250	250	250	-	-	250	250	-	
690	690	690	690	690	690	690	690	690	690	
6	6	6	6	6	6	6	6	6	8	
50	85	50	100	125	50	85	100	100	-	
35	50	42	65	100	35	50	65	65	-	
35	50	35	50	85/50(lcs)	35	50	65	65	65	
30	42	35	50	85	30	42	65	65	45	
22	35	25	45	65	22	35	50	50	22	
18	25	22	25	30	18	25	45	45	-	
-	-	-	-	-	-	-	-	-	20	
-	-	30	50	60	-	-	-	-	-	
-	-	20	40	40	-	-	40	-	-	
50	50	100	50	50	50	50	50	50	50	
A	A	A	A	A	A	A	A	A	A	
4000	4000	2500	2500	2500	2500	2500	2500	2500	10000	
1000	1000	500	500	500	500	500	500	500	4000	
LSIA configuration		fixed	fixed	fixed	LSIA configuration		Fixed-thermal, Adjustable-magnetic		LSIA configuration	●
●	●				●	●			●	●
					▲	▲			●	
●	●	●	●	●	●	●	●	●	●	●
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-	-	-	-	-	-	-	-	-	-	●
				see Fig. 7			see Fig. 8	see Fig. 8	see Fig. 9	
		11	11	11	11	11.5	-	-	-	
7.4	7.4	11.5	11.5	11.5	11.5	11.5	19.4	19.4	23	
		18.2	18.2	18.2	18.2		27		-	

Fig. 8

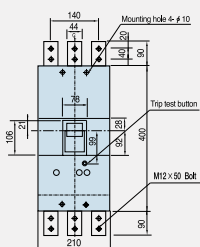
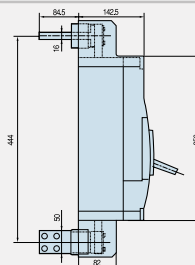
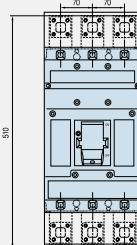
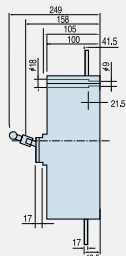


Fig. 9



## Leader in Electrics & Automation



### Safety Instructions

- For your safety, please read user's manual thoroughly before operating.
- Contact the nearest authorized service facility for examination, repair, or adjustment.
- Please contact a qualified service technician when you need maintenance.  
Do not disassemble or repair by yourself!
- Any maintenance and inspection shall be performed by the personnel having expertise concerned.



**LG Industrial Systems**

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