

Meta-MEC
**Low Voltage
Circuit Breakers**



Electric Equipment



General characteristics

Features | AB type MCCBs up to 225A

Offering economical solution with compact sizes.



105 x 165 x 60mm
225AF -Max. 35kA



90 x 155 x 60mm
50AF, 100AF -Max. 35kA



75 x 130 x 60mm
30AF, 50AF, 60AF
100AF -Max. 10kA

- Offering economical solution with compact sizes and increased interrupting capacities.
- Employing a fixed thermal and fixed magnetic trip.
- Offering more accessories such as rear connection and extended rotary type handles.
- Frames made of rigid materials of engineering plastics.

Key lock built-in MCCBs



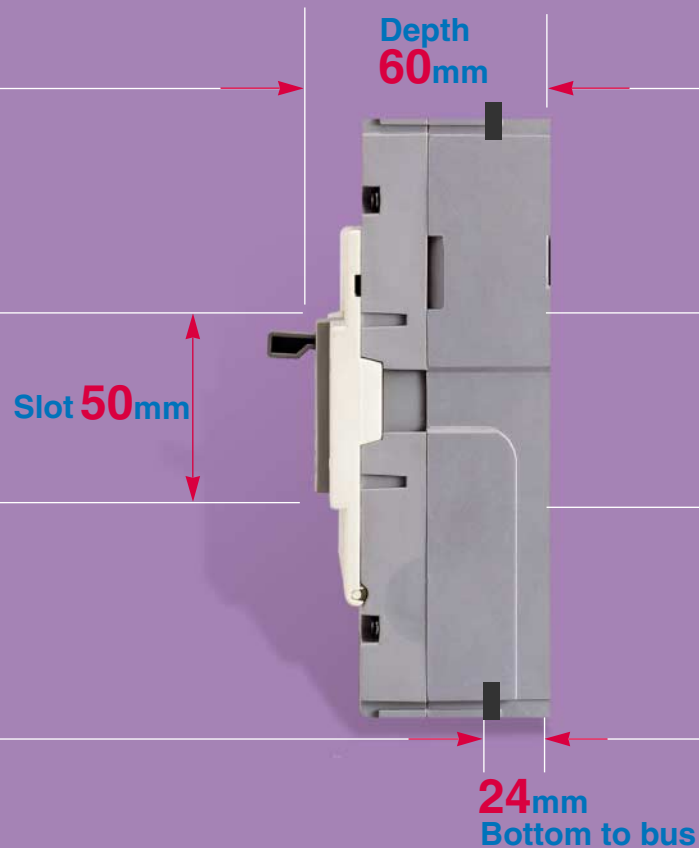
ABS103k

ABS203k



Compact 2-pole exclusive sizes

Three and four-pole versions are available and also offered in the double-pole version up to 100A with breaking capacities of 10, 25 and 35kA at 380/415V.

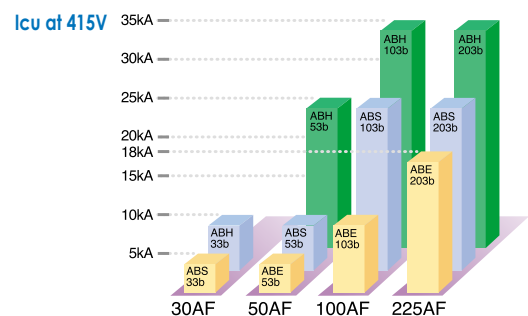


Standardization

3 different physical frame sizes but have the same dimensions for installation.

Earth leakage breakers physically interchangeable with MCCBs.

Thanks to the compact earth leakage module it is possible to build the module inside of MCCB without enlarging overall dimensions. Meta-MEC series provide three-pole earth leakage breakers physically interchangeable with MCCBs in the same current rating. It is very useful to construct modular panels.



General characteristics

Features | 400AF & 800AF MCCBs

AB type breakers

- Each breaker uses the individual rating plug for determining the continuous current rating.
- MCCB with reference temperature 50°C is available on request.
- Motor protection MCCBs with magnetic only trip are available.



800AF

Thermal-magnetic trip unit
2, 3 and 4 pole
In=500, 600, 630, 700, 800A
Interrupting capacity ... 35, 50 and 85kA
Trip unit with LI configuration
- fixed thermal and magnetic
- magnetic adjustable type is optional

Rating plug

is available with fixed ampere rating and the installed one is field interchangeable with the other

The pairs of rating plugs interchangeable each other

250A ↔ 300A
350A ↔ 400A
500A ↔ 600A
500A ↔ 630A
700A ↔ 800A

400AF

Thermal-magnetic trip unit
2, 3 and 4 pole
In=250, 300, 350, 400A
Interrupting capacity ... 25, 35, 50 and 85kA
Trip unit with LI configuration
-fixed thermal and magnetic
-magnetic adjustable type is optional

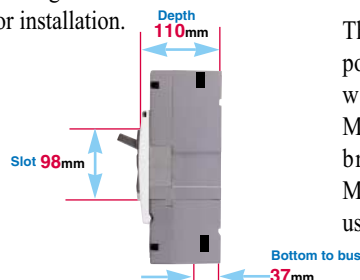


Common auxiliaries for 400 & 800AF breakers

Auxiliary switch, Alarm switch, Shunt trip and Under voltage trip unit are frequently used electric auxiliaries for MCCBs. They are designed to be installed easily and to be used in common for 400 and 800AF breakers regardless of the type of the trip unit.

Standardization

offering the same dimensions for installation.



Earth leakage breakers physically interchangeable with MCCBs.

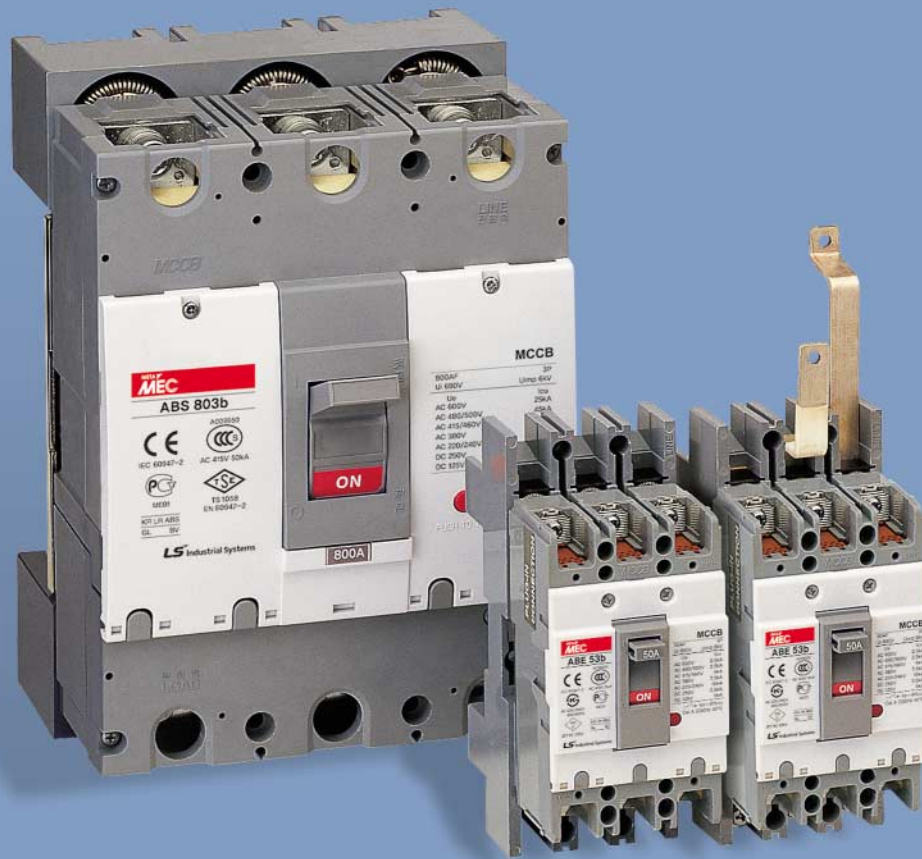
Thanks to the compact earth leakage module it is possible to build the module inside of MCCB without enlarging overall dimensions. Meta MEC series provide three-pole earth leakage breakers physically interchangeable with MCCBs in the same current rating. It is very useful to construct modular panels.

General characteristics

Features | Plug-in MCCB

Plug-in MCCB

Plug-in base makes it possible to extract and/or rapidly replace the circuit breaker without having to touch connections for ship and important installations.



Plug-in mounting block ordering information

Terminal for plug-in accessory

PB	A	3	FR
Plug-in mounting block	Applicable MCCB	Number of poles	Connection type
	A	3	FR
	C	3P	FRL
	D		1DB
	E		2DB
	F		
	G		
	H		
	I		
	J		

PBA	100
Plug-in accessory	Applicable MCCB
	100
	225

~50A	ABS50b
60~100A	ABE100b ABS100b
	ABS200b
	ABE200a
	ABS400b

Quick selection table

MCCBs

30AF to 225AF

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, 15, 20, 30	5, 10, 15, 20, 30	5, 10, 15, 20, 30, 40, 50		15, 20, 30, 40, 50	50 Electronically adjustable: (0.5-0.6-0.7-0.8-0.9-1.0) × In
Technical data conforming to IEC/EN60947-2							
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							
AC 50/60Hz	220/240V	10	25	10	25	50	125
	380V	7.5	14	7.5	14	25	85
	415V	5	10	5	10	25	85
	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
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
Type of trip unit							
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		▲	▲	▲	▲	▲	
Accessories							
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(3 pole)	●	●	●	●	●	-
	Motor operator	-	-	-	-	-	-
Dimensions (W × H × Dmm)		3 pole breaker 75 × 130 × 60		75 × 130 × 60		90 × 155 × 60	105 × 165 × 86
Weight(kg)	2 pole	0.45	0.45	0.45	0.45	0.7	
	3 pole	0.65	0.65	0.65	0.65	1	1.7
	4 pole				0.85	1.2	
Reference page no.		33		34			

* 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



60		100							225		
ABE	ABS	ABE	ABS	ABH	GBN	GBH	GBL	GBL(E)	ABE	ABS	ABH
5	10	10	25	35	35	50	85	85	18	25	35
2, 3	2, 3, 4	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
ABE62b	ABS62b	ABE102b	ABS102b	ABH102b	GBN102	GBH102	GBL102		ABE202b	ABS202b	ABH202b
ABE63b	ABS63b	ABE103b	ABS103b	ABH103b	GBN103	GBH103	GBL103	GBL103E	ABE203b	ABS203b	ABH203b
	ABS64b	ABE104b	ABS104b	ABH104b	GBN104	GBH104	GBL104		ABE204b	ABS204b	ABH204b
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) × In			100 Electronically adjustable; (0.5-0.6-0.7-0.8-0.9-1.0) × In	100, 125, 150, 175, 200, 225		
600	600	600	600	600	600	600	600	600	600	600	600
250	250	250	250	250	250	250	250	-	250	250	250
690	690	690	690	690	690	690	690	690	690	690	690
6	6	6	6	6	6	6	6	6	6	6	6
10	25	25	50	65	50	85	125	125	35	50	65
7.5	14	14	25	35	35	50	85	85	18	25	35
5	10	10	25	35	35	50	85	85	18	25	35
5	10	10	25	35	35	50	85	85	18	25	35
2.5	7.5	7.5	14	25	30/22	42/35	65/50	65/50	10	14	25
2.5	5	5	10	18	18	25	35	35	7.5	10	18
5	10	10	20	25	-	-	-	-	15	20	25
2.5	5	5	14	18	35	50	85	-	10	14	18
50	50	50	50	50	75	75	75	75	50	50	50
A	A	A	A	A	A	A	A	A	A	A	A
8500	8500	8500	8500	8500	20000	20000	10000	10000	7000	7000	7000
1500	1500	1500	1500	1500	10000	10000	5000	5000	1000	1000	1000
			fixed	fixed	Adjustable-thermal, Fixed-magnetic			LSIA configuration	fixed	fixed	fixed
								●			
fixed	fixed	fixed									
▲	▲	▲	▲	▲			▲		▲	▲	▲
●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●
-	-	-	-	-	-	-	-	-	-	-	-
●	●	●	●	●	●	●	●	●	●	●	●
-	-	-	-	-	-	-	-	-	-	-	-
75 × 130 × 60		75 × 130 × 60	90 × 155 × 60		90 × 140 × 86		105 × 165 × 86		105 × 165 × 60		
0.45	0.45	0.45	0.7	0.7	1.1	1.1	1.5		1.1	1.1	1.1
0.65	0.65	0.65	1.1	1.1	1.2	1.2	1.7	1.7	1.2	1.2	1.2
	0.85	0.85	1.2	1.2	1.5	1.5	2.1		1.5	1.5	1.5
34		35		47			48		36		

Quick selection table

MCCBs

250AF to 1600AF

Frame size(AF)		250				400				
Frame type		GBN	GBH	GBL	GBL(E)	ABE	ABS	ABH	ABL	
Breaking capacity(kA), Icu at 415VAC		35	50	85	85	25	35	50	85	
Number of poles		2, 3, 4	2, 3, 4	2, 3, 4	3	2,3,4	2,3,4	2,3,4	2, 3, 4	
Type	2 pole	GBN202	GBH202	GBL202		ABE402b	ABS402b	ABH402b	ABL402b	
	3 pole	GBN203	GBH203	GBL203	GBL203E	ABE403b	ABS403b	ABH403b	ABL403b	
	4 pole	GBN204	GBH204	GBL204		ABE404b	ABS404b	ABH404b	ABL404b	
Rated current (A)		125, 160, 200, 250 Thermally adjustable : (0.8- 0.9-1.0) × In			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				
Technical data conforming to IEC/EN60947-2										
Rated operational voltage(V), Ue(50/60Hz)		600	600	600	600	600	600	600	600	
Rated operational voltage(V), Ue(DC)		250	250	250	-	250	250	250	250	
Rated insulation voltage(V), Ui(50/60Hz)		690	690	690	690	690	690	690	690	
Rated impulse withstand voltage(kV), Uimp		6	6	6	6	6	6	6	6	
Ultimate breaking capacity(kA), Icu										
	AC 50/60Hz	220/240V	50	85	125	125	35	50	85	125
		380V	35	50	85	85	30	42	65	100
		415V	35	50	85	85	25	35	50	85/50(Ics)
		440/460V	35	50	85	85	25	35	50	85
		480/500V	30/22	42/35	65/50	65/50	18	25	35	65
		600V	18	25	35	35	18	22	25	30
		690V	-	-	-	-	-	-	-	-
	DC	125V	-	-	-	-	20	30	50	60
		250V	35	50	85	-	10	20	40	40
Service breaking capacity(%Icu), Ics			75	75	75	75	100	100	50	50
Category of use		A	A	A	A	A	A	A	A	A
Endurance	Mechanical	10000	10000	10000	10000	4000	4000	4000	4000	4000
(Number of operations)	Electrical	5000	5000	5000	5000	1000	1000	1000	1000	1000
Type of trip unit										
Thermal-magnetic release		Adjustable-thermal & magnetic					fixed	fixed	fixed	fixed
Electronic release						LSIA configuration				
Pre-alarm via LED						●				
Hydraulic-magnetic release										
Magnetic release only without thermal trip				▲			▲			▲
Earth leakage protection	for 3 pole						▲	▲	▲	▲
Accessories										
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(3pole)	●	●	●	-	●	●	●	●	●
	Motor operator	-	-	-	-	-	-	-	-	-
Dimensions (W × H × Dmm)	3 pole breaker	105 × 165 × 86				140 × 257 × 113				
Weight(kg)	2 pole	1.5	1.5	1.5	-	5.2	5.2	5.2	5.2	
	3 pole	1.7	1.7	1.7	1.7	6.2	6.2	6.2	6.2	
	4 pole	2.1	2.1	2.1		7.8	7.8	7.8	7.8	
Reference page no.		48			49	54				

* Note) 1. ● applicable or available
2. ▲ available as a separate breaker



400		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		
GBN403E	GBH403E	ABE802b	ABS802b	ABL802b	GBN803E	GBH803E	ABS1003	ABS1203	ABS1203E	GBN1603E	
		ABE803b	ABS803b	ABL803b			ABS1004	ABS1204			
		ABE804b	ABS804b	ABL804b							
400 Electronically adjustable : (0.5-0.6-0.7-0.8-0.9-1.0) × In		500, 600, 630, 700, 800 Interchangeable via rating plug between 500 and 600, 500 and 630, 700 and 800			800 Electronically adjustable : (0.5-0.6-0.7-0.8-0.9-1.0) × In		1000	1200	1200 Electronically adjustable: (0.5-0.6-0.7-0.8-0.9-1.0) × In	1600	
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		
●	●				●	●			●	●	
			▲	▲	▲				●		
●	●	●	●	●	●	●	●	●	●	●	
●	●	●	●	●	●	●	●	●	●	●	
●	●	●	●	●	●	●	●	●	●	●	
●	●	●	●	●	●	●	-	-	-	-	
-	-	●	●	●	-	-	-	-	-	-	
●	●	●	●	●	●	●	-	-	-	-	
●	●	●	●	●	●	●	●	●	●	●	
●	●	●	●	●	●	●	-	-	-	-	
-	-	●	●	●	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	
140 × 257 × 113		210 × 280 × 113					210 × 400 × 105		210 × 400 × 105		210 × 350 × 142.5
-	-	11	11	11	-	-	-	-	-	-	
7.4	-	11.5	11.5	11.5	11.5	-	19.4	19.4	-	23	
-	-	18.2	18.2	18.2	-	-	27	-	-	-	
60	-	55			61	-	64	65	-	67	

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 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.

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Specifications in this catalog are subject to change without notice due to continuous product development and improvement.