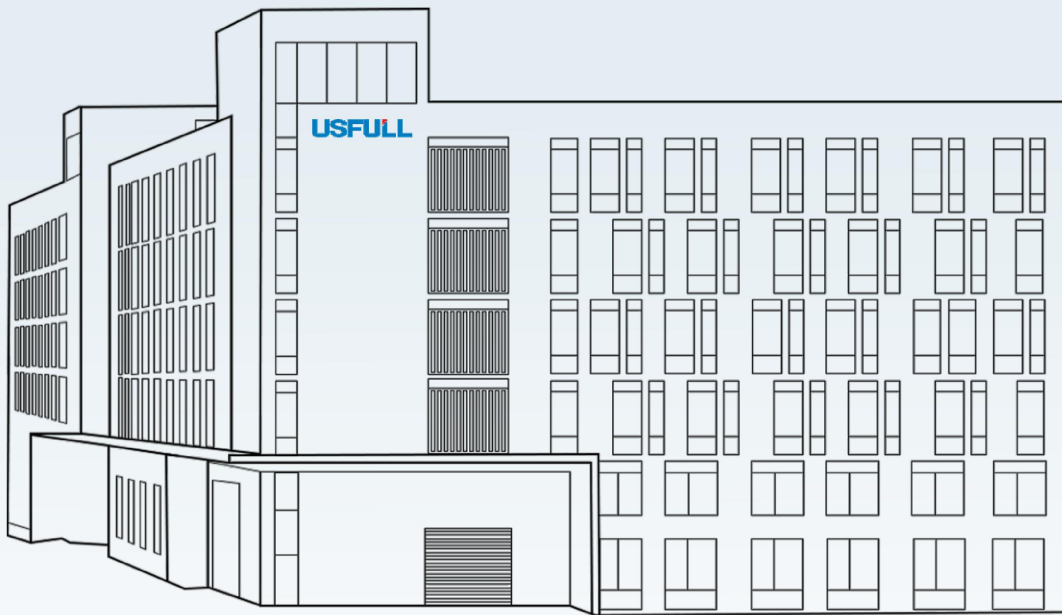




Circuit Breaker



Company Introduction

**Full of confidence,
Will only offer satisfactory quality.**

(brand: USFULL) was established in 2005.

The company focuses on the R&D, manufacture and sales of products in four major areas, including industrial VFD, solar pump inverter, PV accessories, and low-voltage electrical products.

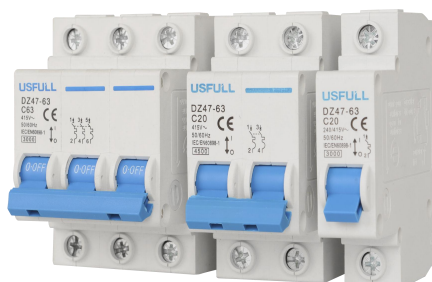
We have strong manufacture department and quality control department, to ensure state-of-art quality, stable performance and in-time delivery.

Full of energy, full of goodwill. USFULL team will keep moving to supply best solutions to customers.

CONTENTS

MINIATURE CIRCUIT	
DZ47-63 Miniature Circuit Breaker	01
DZ47-63K Miniature Circuit Breaker	02
FMB7 Miniature Circuit Breaker	03
DZ47-63H Miniature Circuit Breaker	04
DPN Miniature Circuit Breaker	05
NC100H Miniature Circuit Breaker	06
FMB7-PV DC Breaker	07
FMB1Z DC Breaker	08
WiFi Breaker	09
MOULDED CASE CIRCUIT	
ABE MCCB	10
ABN MCCB	11
CM1 MCCB	12
FMM1-PV DC MCCB	13
RESIDUAL CURRENT CIRCUIT	
F360 RCCB	14
ID RCCB	15
MOTOR PROTECTION CIRCUIT	
GV Series MPCB	16
SURGE PROTECT DEVICE	
BY Series AC SPD	17

DZ47-63 Miniature Circuit Breaker



DZ47-63 AC MCB

APPLICATION

DZ47-63 series circuit breaker is used in lighting distribution system or motor distribution system for protecting overload and shortcircuit in the system. The product is classic in structure, light in weight, reliable and excellent in performance. It has high breaking capacity, can trip quickly. Its case and body are adopted with high re-resistant and shockproof plastics.

The product, with long life, is mainly used in AC 50Hz/60Hz single pole 230V or two, three, four-poles 400V circuit for overload and shortcircuit protection as well as for unfrequent on-and-off switching electric equipment and lighting circuit in normal case.

This product conform to GB10963, IEC60898, BS3871.

SPECIFICATION

Rated Current I_n (A)		6, 10, 16, 20, 25, 32, 40, 50, 63
Rated Operational Voltage U_e (V)	1P	220/380, 230/400, 240/415
	2P, 3P, 4P	380, 400, 415
Rated Insulation Voltage U_i (V)		415
Rated Impulse Withstand Voltage U_{imp} (kV)		4kV
Ultimate Short Circuit Breaking Capacity I_{cu} (kA)		3kA, 4.5kA
Rated Frequency (Hz)		50/60Hz
Electrical Life (operations)		≥ 4000
Mechanical Life (operations)		≥ 10000
Tripping Curve		B ($3\sim 5I_n$), C ($5\sim 10I_n$), D ($10\sim 14I_n$)
Standard		IEC/EN 60898-1

DZ47-63K Miniature Circuit Breaker



DZ47-63K AC MCB

APPLICATION

DZ47-63K is updated based on DZ47 series, with better structure, better performance. The breaker are designed with higher quality shell.

The product, with long life, is mainly used in AC 50Hz/60Hz single pole 230V or two, three, four-poles 400V circuit for overload and shortcircuit protection as well as for unfrequent on-and-off switching electric equipment and lighting circuit in normal case.

This product conform to GB10963, IEC60898, BS3871.

SPECIFICATION

Rated Current I_n (A)		6, 10, 16, 20, 25, 32, 40, 50, 63
Rated Operational Voltage U_e (V)	1P	220/380, 230/400, 240/415
	2P, 3P, 4P	380, 400, 415
Rated Insulation Voltage U_i (V)		415
Rated Impulse Withstand Voltage U_{imp} (kV)		4kV
Ultimate Short Circuit Breaking Capacity I_{cu} (kA)		3kA, 4.5kA
Rated Frequency (Hz)		50/60Hz
Electrical Life (operations)		≥ 4000
Mechanical Life (operations)		≥ 10000
Tripping Curve		B (3~5 I_n), C (5~10 I_n), D (10~14 I_n)
Standard		IEC/EN 60898-1

FMB7 Miniature Circuit Breaker



FMB7 AC MCB

APPLICATION

When higher breaking capacity and other higher performance demand is needed, FMB7 will be an ideal solution.

The FMB7 frame can stand for 6kA and 10kA design.

- * Improved structure
- * Higher standard fire retardant shell
- * Stronger arc-distinguishing ability

SPECIFICATION

Rated Current I_n (A)		6, 10, 16, 20, 25, 32, 40, 50, 63
Rated Operational Voltage U_e (V)	1P	220/380, 230/400, 240/415
	2P, 3P, 4P	380, 400, 415
Rated Insulation Voltage U_i (V)		415
Rated Impulse Withstand Voltage U_{imp} (kV)		4kV
Ultimate Short Circuit Breaking Capacity I_{cu} (kA)		6kA, 10kA
Rated Frequency (Hz)		50/60Hz
Electrical Life (operations)		≥ 4000
Mechanical Life (operations)		≥ 10000
Tripping Curve		B (3~5 I_n), C (5~10 I_n), D (10~14 I_n)
Standard		IEC/EN 60898-1

DZ47-63H Miniature Circuit Breaker



DZ47-63H AC MCB

APPLICATION

DZ47-63H is an economical type of 6kA MCB.

SPECIFICATION

Rated Current I_n (A)		6, 10, 16, 20, 25, 32, 40, 50, 63
Rated Operational Voltage U_e (V)	1P	220/380, 230/400, 240/415
	2P, 3P, 4P	380, 400, 415
Rated Insulation Voltage U_i (V)		415
Rated Impulse Withstand Voltage U_{imp} (kV)		4kV
Ultimate Short Circuit Breaking Capacity I_{cu} (kA)		6kA
Rated Frequency (Hz)		50/60Hz
Electrical Life (operations)		≥ 4000
Mechanical Life (operations)		≥ 10000
Tripping Curve		B (3~5 I_n), C (5~10 I_n), D (10~14 I_n)
Standard		IEC/EN 60898-1

DPN Miniature Circuit Breaker



DPN AC MCB

APPLICATION

USFULL DPN, is a 1P+N design circuit breaker. It's one standard modular in width, with 2 pole breaker function.

USFULL offers general current of DPN from 6A to 32A.

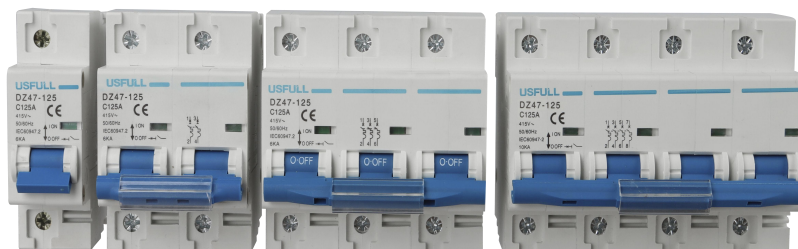
USFULL DPN breaker is 6 rivets design. There is a mark on the breaker to indicate which pole is for neutral line and which is for live line.

You can visit USFULL website or contact USFULL sales team for wiring instruction.

SPECIFICATION

Rated Current I_n (A)		6, 10, 16, 20, 25, 32
Rated Operational Voltage U_e (V)	1P+N	240V
Rated Insulation Voltage U_i (V)		415
Rated Impulse Withstand Voltage U_{imp} (kV)		4kV
Ultimate Short Circuit Breaking Capacity I_{cu} (kA)		3kA
Rated Frequency (Hz)		50/60Hz
Electrical Life (operations)		≥ 4000
Mechanical Life (operations)		≥ 10000
Tripping Curve		B (3~5 I_n), C (5~10 I_n)
Standard		IEC/EN 60898-1

DZ47-125 Miniature Circuit Breaker



NC100H AC MCB

APPLICATION

USFULL NC100H miniature circuit breaker ranges from 80A to 125A.

It's an economical solution compared to moulded case circuit breaker (MCCB).

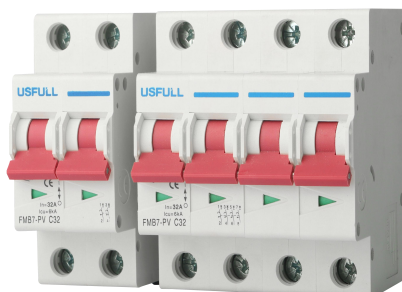
The smaller size is another advantage during the installation. It can be installed on din-rail.

The width is 1.5* standard modular width.

SPECIFICATION

Rated Current I_n (A)		6, 10, 16, 20, 25, 32, 40, 50, 63
Rated Operational Voltage U_e (V)	1P	220/380, 230/400, 240/415
	2P, 3P, 4P	380, 400, 415
Rated Insulation Voltage U_i (V)		415
Rated Impulse Withstand Voltage U_{imp} (kV)		4kV
Ultimate Short Circuit Breaking Capacity I_{cu} (kA)		6kA, 10kA
Rated Frequency (Hz)		50/60Hz
Electrical Life (operations)		≥ 4000
Mechanical Life (operations)		≥ 10000
Tripping Curve		B ($3 \sim 5I_n$), C ($5 \sim 10I_n$), D ($10 \sim 14I_n$)
Standard		IEC/EN 60898-1

FMB7-PV DC Breaker



FMB7-PV DC Breaker

APPLICATION

USFULL DC breaker, strictly follow PV standard.

We offer FMB7-PV series DC MCB from 6A to 63A, 12V DC to 1000V DC.

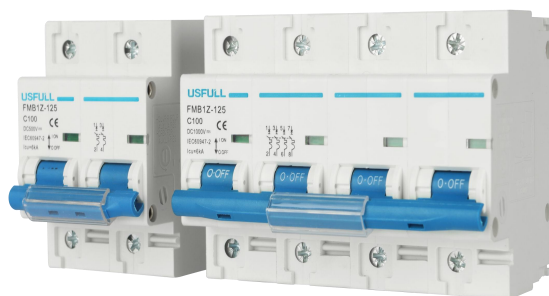
USFULL DC breaker use fire proof shell, which can stand high voltage and severe environment.

USFULL DC MCB will protect the solar system from overload, short circuit, leaking electricity and other extreme environment.

SPECIFICATION

Rated Current In (A)		10, 16, 20, 25, 32, 40, 50, 63
Rated Operational Voltage Ue (VDC)	1P	12, 24, 48, 250
	2P	12, 24, 48, 500
	3P	12, 24, 48, 750
	4P	12, 24, 48, 1000
Rated Insulation Voltage Ui (VDC)		1200VDC
Rated Impulse Withstand Voltage Uimp (kV)		4kV
Ultimate Short Circuit Breaking Capacity Icu (kA)		6kA
Electrical Life (operations)		≥ 2500
Mechanical Life (operations)		≥ 10000
Tripping Curve		C (5~10In)
Standard		IEC/EN 60947-2

FMB1Z-125 DC Breaker



FMB1Z-125 DC Breaker

APPLICATION

USFULL DC breaker, strictly follow PV standard.
The FMB1Z series range from 80A to 125A, 12V to 1000V.

USFULL DC breaker use fire proof shell, which can stand high voltage and severe environment.
USFULL DC MCB will protect the solar system from overload, short circuit, leaking electricity and other extreme environment.

SPECIFICATION

Rated Current In (A)		80, 100, 125
Rated Operational Voltage Ue (VDC)	1P	12, 24, 48, 250
	2P	12, 24, 48, 500
	3P	12, 24, 48, 750
	4P	12, 24, 48, 1000
Rated Insulation Voltage Ui (VDC)		1200VDC
Rated Impulse Withstand Voltage Uimp (kV)		4kV
Ultimate Short Circuit Breaking Capacity Icu (kA)		6kA
Electrical Life (operations)		≥ 2500
Mechanical Life (operations)		≥ 10000
Tripping Curve		C (5~10In)
Standard		IEC/EN 60947-2

WiFi Breaker



WiFi Breaker

APPLICATION

USFULL WiFi breaker can support Tuya App or Ewelink App.
The breaker can be controlled by mobile, with timer function.

USFULL WiFi breaker is the trend of future, which can internet of things.

Energy meter function and RCBO function are optional.

SPECIFICATION

Rated Current In (A)	MCB	10, 16, 20, 25, 32, 40, 50, 63, 80, 100, 125
	MCB+Meter	10, 16, 20, 25, 32, 40, 50, 63, 80, 100
	RCBO+Meter	10, 16, 20, 25, 32, 40, 50, 63, 80, 100
Rated Operational Voltage Ue (V)	1P, 2P	220VAC, 230VAC
	3P, 4P	380VAC, 400VAC
Pole	MCB	1P, 2P, 3P, 4P
	MCB+Meter	1P, 2P, 3P, 4P
	RCBO+Meter	2P, 4P
Rated Impulse Withstand Voltage Uimp (kV)		6kV
Ultimate Short Circuit Breaking Capacity Icu (kA)		3kA
Rated Frequency (Hz)		50Hz
Electrical Life (operations)		≥ 4000
Mechanical Life (operations)		≥ 10000
Tripping Curve		C (5~10In)
Standard		GB/T 10963-1

ABE MCCB



ABE MCCB

SPECIFICATION

Current Frame			100	225	400	600	800
Model Type	2P		ABE102b	ABE202b	ABE402b	ABE602b	ABE802b
	3P		ABE103b	ABE203b	ABE403b	ABE603b	ABE803b
	4P		ABE104b	ABE204b	ABE404b	ABE604b	ABE804b
Rated Current In (A)			10, 15, 20, 30, 40, 50, 60, 75, 100	100, 125, 150, 175, 200, 225	250, 300, 350, 400	500, 600	800
Rated Operational Voltage Ue (V)			600V				
Rated Insulation Voltage Ui (V)			690V				
Rated Impulse Withstand Voltage Uimp (kV)			6kV				
Ultimate Short Circuit Breaking Capacity Icu (kA)	50/60Hz	220/240V	25	35	35	50	50
		380V	14	18	30	42	42
		415V	10	18	25	35	35
		440/460V	10	18	25	35	35
		480/500V	7.5	10	18	25	25
		600V	5	7.5	18	22	22
Electrical Life (operations)			1500	1000	1000	1000	500
Mechanical Life (operations)			8500	7000	4000	2500	2500
Standard			IEC 60947-2				

ABN MCCB



ABN MCCB

SPECIFICATION

Current Frame			100	250	400	800
Model Type		2P	ABN102c	ABN202c	ABN402c	ABN802c
		3P	ABN103c	ABN203c	ABN403c	ABN803c
		4P	ABN104c	ABN204c	ABN404c	ABN804c
Rated Current In (A)			15, 20, 30, 40, 50, 60, 75, 100	100, 125, 150, 175, 200, 225, 250	250, 300, 350, 400	500, 630, 700, 800
Rated Operational Voltage Ue (V)			690V			
Rated Insulation Voltage Ui (V)			750V			
Rated Impulse Withstand Voltage Uimp (kV)			8kV			
Ultimate Short Circuit Breaking Capacity Icu (kA)	50/60Hz	220/250V	35	85	50	50
		380V	22	42	42	45
		415V	18	37	37	37
		480/500V	10	26	18	25
		690V	5	8	5	8
Electrical Life (operations)			1500	1000	1000	1000
Mechanical Life (operations)			8500	7000	4000	2500
Standard			IEC 60947-2			

CM1 MCCB

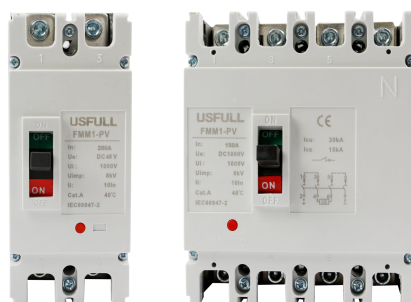


CM1 MCCB

SPECIFICATION

Model Type		CM1-63	CM1-100	CM1-225	CM1-400	CM1-630	CM1-800
Rated Current In (A)		6, 10, 16, 20, 25, 32, 40, 50, 63	10, 16, 20, 25, 32, 40, 50, 63, 80, 100	100, 125, 160, 180, 200, 225	225, 250, 315, 350, 400	400, 500, 630	630, 700, 800
Rated Operational Voltage Ue (V)	3P	400VAC					
	4P						
Rated Insulation Voltage Ui (V)		500V	800V				
Rated Impulse Withstand Voltage Uimp (kV)		8kV					
Ultimate Short Circuit Breaking Capacity Icu (kA)	50/60Hz	50	50	50	65	65	75
Standard		IEC 60947-2					

FMM1-PV DC MCCB



FMM1-PV DC MCCB

APPLICATION

USFULL DC breaker of moulded case, strictly follow PV standard.

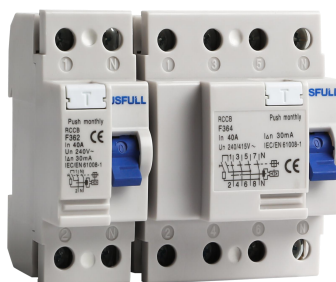
Recommend DC MCCB from 125A to 630A. The voltage range is from 12V DC to 1000V DC.

USFULL DC Moulded Case Circuit Breaker will offer overload protection, short circuit protection, and other extreme protection for solar system.

SPECIFICATION

Model Type		FMM1-PV-125	FMM1-PV-225	FMM1-PV-400	FMM1-PV-630
Rated Current In (A)		60/ 80/ 100/ 125	125/ 160/ 200/ 225	225/ 250/ 300/ 350/ 400	400/ 500/ 630
Rated Operational Voltage Ue (V)	2P	500VDC			
Rated Operational Voltage Ue (V)	4P	1000VDC			
Rated Insulation Voltage Ui (Vdc)		1500V			
Rated Impulse Withstand Voltage Uimp (kV)		8kV			
Ultimate Short Circuit Breaking Capacity Icu (kA)		M	35	M	35
		H	35	H	15
		R	65	R	65

F360 RCCB



F360 RCCB

APPLICATION

The F360 series leakage circuit breaker is mainly used in AC 50Hz (or 60Hz), rated voltage to 410V, rated current to 63A, and the action performance has nothing to do with the line voltage in household and similar places.

It is mainly used for electric shock protection and indirect to people.

Contact protection can also protect the safety of electrical equipment, and can also be used for infrequent operation and conversion of lines.

SPECIFICATION

Model Type	F362	F364
Rated Current I_n (A)	16, 25, 32, 40, 63	25, 32, 40, 63, 100
Rated Voltage U_e (V)	240V	240V/415V
Pole Number	1P+N	3P+N
Leakage Acting Current (mA)	10, 30, 100, 300	30, 100, 300
Range of Break-off	$0.5 \cdot I_n^{\Delta n} \sim 1.0 \cdot I_n^{\Delta n}$	
Rated Frequency (Hz)	50/60Hz	
Type	Electronic / Magnetic	
Tripping Time (s)	$\leq 0.1s$	
Electrical Life (operations)	≥ 2000	
Mechanical Life (operations)	≥ 4000	
Standard	IEC/EN 61008-1	

ID RCCB



ID RCCB

APPLICATION

USFULL ID type RCCB has a residual current operated electromechanical release which operates without any auxiliary source of supply to open circuit automatically in the case of an earth leakage fault between phase and earth greater than or equal to a threshold of 10mA, 30mA, 100mA, 300mA.

The USFULL ID RCCB has indication window to show the working status of the device and circuit. All important and necessary information are printed on the shell.

SPECIFICATION

Model Type	ID	
Rated Current In (A)	16, 25, 32, 40, 63, 80, 100	25, 32, 40, 63, 80, 100
Rated Voltage Ue (V)	240V	240V/415V
Pole Number	1P+N	3P+N
Leakage Acting Current (mA)	10, 30, 100, 300	30, 100, 300
Range of Break-off	$0.5 \cdot I^{\Delta n} \sim 1.0 \cdot I^{\Delta n}$	
Rated Frequency (Hz)	50/60Hz	
Type	Electronic / Magnetic	
Tripping Time (s)	$\leq 0.1s$	
Electrical Life (operations)	≥ 2000	
Mechanical Life (operations)	≥ 4000	
Standard	IEC/EN 61008-1	

GV Series MPCB



GV2 MPCB



GV3 MPCB

APPLICATION

FW-GV series motor protection circuit breakers are mainly used to the overload and short circuit protection of the motor in AC50/60HZ, up to 660V, 0.1~80A power circuit, as a full-voltage starter to start and cut off the motor, under the AC3 load or for the overload and short circuit protection of the circuit and power equipment in the power distribution network.

SPECIFICATION

Type	Standard power ratings of 3-phase motors 50/60Hz in category AC-3 (kW)				Current setting range(A)
	220V	380V	415V	440V	
FW-GV2-ME01	-	-	-	-	0.1~0.16
FW-GV2-ME02	-	-	-	-	0.16~0.25
FW-GV2-ME03	-	-	-	-	0.16~0.25
FW-GV2-ME04	-	-	-	-	0.4~0.63
FW-GV2-ME05	-	-	-	0.37	0.63~1
FW-GV2-ME06	-	0.37	-	0.55	1~1.6
FW-GV2-ME07	0.37	0.75	0.75	1.1	1.6~2.5
FW-GV2-ME08	0.75	1.5	1.5	1.5	2.5~4
FW-GV2-ME10	1.1	2.2	2.2	3	4~6.3
FW-GV2-ME14	2.2	4	4	4	6~10
FW-GV2-ME16	3	5.5	5.5	7.5	9~14
FW-GV2-ME20	4	7.5	9	9	13~18
FW-GV2-ME21	5.5	11	11	11	17~23
FW-GV2-ME22	5.5	11	11	11	20~25
FW-GV2-ME32	7.5	15	15	15	24~32
FW-GV3-ME06	-	0.37	-	0.55	1~1.6
FW-GV3-ME07	0.37	0.75	1.1	1.1	1.6~2.5
FW-GV3-ME08	0.75	1.5	1.5	1.5	2.5~4
FW-GV3-ME10	1.1	2.2	2.2	3	4~6
FW-GV3-ME14	2.2	4	4	4	6~10
FW-GV3-ME20	4	7.5	7.5	7.5	10~16
FW-GV3-ME25	5.5	11	11	11	16~25
FW-GV3-ME40	11	18.5	22	22	25~40
FW-GV3-ME63	15	30	33	33	40~63
FW-GV3-ME80	22	40	45	45	56~80

BY Series AC SPD



BY 40 1P

APPLICATION

USFULL AC surge protect device is use for surge protection.
 In 5~40kA, I_{max} 10~80kA.
 1 pole ~ 4 pole.
 Different voltage available.

SPECIFICATION

Model Type	BY-20	BY-40	BY-60	BY-80
Pole Number	1P/2P/3P/4P			
Maximum Continuous Operating Voltage (Uc)	175V/275V/385V	275V/385V	275V/385V	275V/385V
Rated discharge current (8/20ps) I _n	10kA	20kA	30kA	40kA
Maximum discharge current (8/20ps) I _{max}	20kA	40kA	60kA	80kA
Rated voltage (U _n)	1P/2P: 230V; 3P&4P: 230V/400V			
Number of discharges L _{max} (No.)	1			
Number of discharges L _n (No.)	10			
Int. short circuit withstand current	10	25	25	25
Response time	< 20ns			
Leakage current	< 20μA			