

ACB / MCCB / ELCB / ATS MCB / SPD / MS / MMS



SHIHLIN ELECTRIC & ENGINEERING

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MCCB
ELCB

ATS

ACB

MCB

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MCCB Frame Size Selection Table

BM	100						SN	3P	30A	
Frame Size	Rated Breaking Capacity (kA)						Pole	Rated Current In(A)	Accessory	
	Type	IEC60947-2								
		220V	380V	415V	440V	500V				
30	CN	2.5	1.5	1.5	-	-	2, 3	3, 5, 10, 15, 20, 30	Blank	No Acc.
	SN	5	2.5	2.5	2.5	1.5	3		AX	Auxiliary Switch
50	CN	5	2.5	2.5	2.5	1.5	2, 3	10, 15, 20, 30, 40, 50	AL	Alarm Switch
60	HBN	50	30	25	25	15	3	10, 15, 20, 30, 40, 50, 60	SHT	Shunt Trip
63	SN	10	7.5	7.5	7.5	5	2, 3, 4	10, 15, 16, 20, 25, 30, 32, 40, 50, 60, 63	UVT	Under Voltage Trip
	HN	25	15	10	10	5	2, 3, 4			
100	FTD	25	5	5	-	-	1	15, 20, 30, 40, 50, 60, 75, 100		
	MN	15	10	10	7.5	5	2, 3	10, 15, 20, 30, 40, 50, 60, 75, 100		
	SN	25	15	10	10	7.5	2, 3			
	HN	50	30	25	25	15	2, 3, 4			
	HS	125	85	85	70	50	3, 4	40, 50, 63, 80, 100		
	BTD	25	15	10	10	5*	2, 3, 4	15, 16, 20, 25, 30, 32, 40, 50, 60, 63, 75, 80, 100		
	STD	50	30	25	25	5*	2, 3, 4			
	LTD	85	36	36	32	5*	2, 3, 4			
	125	SN	30	22	22	15	7.5	2, 3, 4	15, 20, 30, 40, 50, 60, 75, 100, 125	
HN		50	30	25	25	15	2, 3, 4	10, 15, 16, 20, 25, 30, 32, 40, 50, 60, 63, 70, 75, 80, 100, 125		
LTD		85	36	36	32	5*	2, 3, 4			
HTA		100	50	50	50	10*	2, 3, 4			
RTA		100	70	70	50	10*	2, 3, 4			
160	SN	50	30	25	25	15	2, 3, 4	125, 140, 160		
	HN	85	36	36	32	20	3, 4			
	HS	125	85	85	70	50	3, 4	40, 50, 60, 63, 70, 75, 80, 100, 125, 140, 150, 160		
	HTA	100	50	50	50	10*	3, 4			
	RTA	100	70	70	50	10*	3, 4			
250	CN	30	22	15	15	7.5	2, 3, 4	125, 150, 175, 200, 225, 250		
	SN	50	30	25	25	15	3, 4			
	HN	85	36	36	32	20	3, 4	175, 200, 225, 250		
	HTA	100	50	50	50	10*	3, 4	175, 200, 225, 250		
	RTA	100	70	70	50	10*	3, 4			
	HS	125	85	85	70	50	3, 4			
400	CN	35	25	25	22	14	2, 3, 4	250, 300, 350, 400		
	SN	50	35	35	30	20	3, 4			
	HN	85	50	50	42	25	3, 4			
	RN	100	70	70	55	42	3, 4			
	UN	125	85	85	85	65	3, 4			
630s	STD	36	25	25	25	10*	3, 4	400, 500, 600, 630		
	LTD	65	36	36	36	10*	3, 4			
	HTD	85	50	50	50	10*	3, 4			
	RTD	100	70	70	70	15*	3, 4			
	STA	36	25	25	25	10*	3, 4			
	LTA	65	36	36	36	10*	3, 4			
	HTA	85	50	50	50	10*	3, 4			
	RTA	100	70	70	70	15*	3, 4			
630	CN	35	25	25	22	14	2, 3, 4	500, 630		
	SN	50	35	35	30	20	3, 4			
	HN	85	50	50	50	25	3, 4			
	RN	100	70	70	70	42	3, 4			
	UN	125	100	85	85	65	3, 4			
800	CN	50	35	35	30	20	3, 4	700, 800		
	SN	85	50	50	50	25	3, 4			
	HN	100	70	70	70	42	3, 4			
	RN	125	100	85	85	65	3, 4			
1000	HS	130	100	85	85	65	3	1000		
1200	HS	130	100	85	85	65	3	1200		
1600	HS	130	100	85	85	65	3	1400, 1600		

Note 1. There is no SHT for 100HS, 30A and below.
2. There is no UVT for 100HS, 160HS, 250HS.
3. Mark * kA rating is 690V.

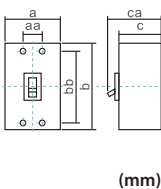
ELCB Frame Size Selection Table

BL		100		SN		3P		30A		
Frame Size	Rated Breaking Capacity (kA)				Pole	Rated Current In(A)	Accessory			
	Type	IEC60947-2								
		220V	380V	440V						
50	SN	10	7.5	7.5	3, 4	15, 20, 30, 40, 50.	Blank	No Acc.		
100	SN	25	15	10	3, 4	15, 20, 30, 40, 50, 60, 75, 100.	AX	Auxiliary Switch		
	HN	50	30	25	3, 4		AL	Alarm Switch		
160	SN	50	30	25	3, 4	125, 140, 160.	SHT	Shunt Trip		
250	SN	50	30	25	3, 4	175, 200, 225, 250.	UVT	Under Voltage Trip		
400	SN	50	35	30	3, 4	250, 300, 350, 400.				
	HN	85	50	42	3, 4					
	RN	100	70	55	3, 4					
	UN	125	85	85	3, 4					
630	HN	85	50	50	3, 4	500, 630.				
	RN	100	70	70	3, 4					
	UN	125	100	85	3, 4					
800	SN	85	50	50	3, 4	700, 800.				
	HN	100	70	70	3, 4					
	RN	125	100	85	3, 4					

BMA Series Frame Size Selection Table

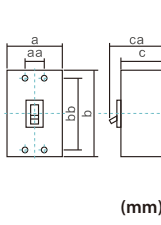
BMA	100				STA	3P		30A		
Frame Size	Rated Breaking Capacity (kA)				Pole	Ir Adjustable	Rated Current In(A)	Accessory		
	Type	IEC60947-2								
		220V(240V)	380V(415V)	690V						
125	STA	85	25	8	3, 4	0.8-0.9-1.0	15, 16, 20, 25, 30, 32, 40, 50, 60, 63, 75, 80, 100, 125	Blank	No Acc.	
	LTA	85	36	8				AX	Auxiliary Switch	
	HTA	100	50	10				AL	Alarm Switch	
160	STA	85	25	8	3, 4	0.8-0.9-1.0	40, 50, 60, 63, 70, 75, 80, 100, 125, 140, 150, 160	SHT	Shunt Trip	
	LTA	85	36	8				UVT	Under Voltage Trip	
	HTA	100	50	10						
250	STA	85	25	8	3, 4	0.8-0.9-1.0	175, 200, 225, 250			
	LTA	85	36	8						
	HTA	100	50	10						
400	LTA	70	36	8	3, 4	0.8-0.9-1.0	250, 300, 350, 400			
	HTA	85	50	10						
	RTA	100	70	15						
630s	STD	36	25	10	3, 4	N/A	400, 500, 600, 630			
	LTD	65	36	10						
	HTD	85	50	10						
	RTD	100	70	15						
	STA	36	25	10						
	LTA	65	36	10						
	HTA	85	50	10						
	RTA	100	70	15						
630	HTD	85	50	10	3, 4	N/A	500, 600, 630			
	RTD	100	70	15						
	HTA	85	50	10		0.8-0.9-1.0				
	RTA	100	70	15						
800	HTD	85	50	10	3, 4	N/A	700, 800			
	RTD	100	70	15						
	HTA	85	50	10		0.8-0.9-1.0				
	RTA	100	70	15						
1000	HED	-	50	35	3, 4	0.4-0.45-0.5-0.6-0.63-0.7-0.8-0.9-1	1000			
	RED	-	70	45						
1250	HED	-	50	35	3, 4	0.4-0.45-0.5-0.6-0.63-0.7-0.8-0.9-1	1250			
	RED	-	70	45						
1600	HED	-	50	35	3, 4	0.4-0.45-0.5-0.6-0.63-0.7-0.8-0.9-1	1600			
	RED	-	70	45						

Molded Case Circuit Breaker

Frame size (AF) (Inm)			30				50				60			
Type			BM30-CN		BM30-SN		BM50-CN		BM60-HBN					
Appearance														
Rated current In (A) at ambient temp. 40°C			3, 5, 10, 15, 20, 30.		3, 5, 10, 15, 20, 30.		10, 15, 20, 30, 40, 50.		10, 15, 20, 30, 40, 50, 60.					
Number of poles (P)			2	3	2	3	2	3	3					
Rated insulation voltage Ui (V)	AC	690		800		800		800						
	DC	—		—		—		—						
Rated operational voltage Ue (V AC)			500		500		500		500					
Uimp(kV)			6		6		6		8					
Dimensions  (mm)	a	45	67.5	50	75	50	75	90						
	b	96		130		130		155						
	c	52		68		68		68						
	ca	67		90		90		90						
	bb	84		111		111		132						
	aa	23.5		25		25		30						
	Weight (kg)			0.3	0.4	0.45	0.65	0.45	0.65	1.3				
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 AC	500V(690V)	—		1.5		1.5		15					
		440V	—		2.5		2.5		25					
		415V	1.5		2.5		2.5		25					
		380V	1.5		2.5		2.5		30					
		220V(240V)	2.5		5		5		50					
	DC	250V	—		—		—		—					
		125V	—		—		—		—					
Short Circuit Instantaneous Adjustment Current (Ii)			10In ± 20%		10In ± 20%		10In ± 20%		10In ± 20%					
Connection			Clamp terminal		Clamp terminal		Clamp terminal		Clamp terminal					
Electrical endurance			8000		8000		8000		8000					
Mechanical endurance			20000		20000		20000		20000					
Optional accessories	Alarm switch	(AL)	—		○		○		○					
	Auxiliary switch	(AX)	—		○		○		○					
	Shunt trip	(SHT)	—		○		○		○					
	Under-voltage trip	(UVT)	—		○		○		○					
	Rotary handle	(EH)	—		●		●		●					
	Terminal cover	(TC)	●		●		●		●					
	Box lug	(TL)	●		●		●		●					
Trip Unit			Hydraulic magnetic		Hydraulic magnetic		Hydraulic magnetic		Hydraulic magnetic					
Tripping button			—		Equipped		Equipped		Equipped					

Note 1. "●" which can be installed by client, "○" which have to be installed by manufacturer. "—" which is not available.
Above accessories table is for 3P breaker.
2. Ics= 50% Icu
3. Adjustable thermal: 80%~100% In.

Molded Case Circuit Breaker

Frame size (AF) (Inm)			63						100									
Type			BM63-SN			BM63-HN			BM100-FTD		BM100-MN		BM100-SN		BM100-HN			
Appearance																		
Rated current In (A) at ambient temp. 40°C			10, 15, 16, 20, 25, 30, 32, 40, 50, 60, 63			10, 15, 16, 20, 25, 30, 32, 40, 50, 60, 63			15, 20, 30, 40, 50, 60, 75, 100.		10, 15, 20, 30, 40, 50, 60, 75, 100.		10, 15, 20, 30, 40, 50, 60, 75, 100.		10, 15, 20, 30, 40, 50, 60, 75, 100.			
Number of poles (P)			2	3	4	2	3	4	1		2	3	2	3	2	3	4	
Rated insulation voltage Ui (V)	AC	800			800			690		800		800		800				
	DC	—			—			—		—		250*		—		—		
Rated operational voltage Ue (V AC)			500			500			415		500		500		500			
Uimp(kV)			8			8			6		6		6		8			
Dimensions	 (mm)	a	50	75	100	50	75	100	25.4		50	75	50	75	60	90	120	
		b	130			130			130		130		130		155			
		c	68			68			60		68		68		68			
		ca	90			90			91		90		90		90			
		bb	111			111			111		111		111		132			
		aa	25			25			—		25		25		30			
		Weight (kg)		0.45	0.65	0.85	0.45	0.65	0.85	0.29		0.45	0.65	0.45	0.65	0.9	1.3	1.6
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 Icu	AC	500V(690V)			5			—		5		7.5		15			
		AC	440V			7.5			—		7.5		10		25			
			415V			7.5			5		10		10		25			
			380V			7.5			5		10		15		30			
			220V(240V)			10			25		15		25		50			
	DC	250V			—			—		—		10*		—		—		
		125V			—			—		—		15*		—		—		
Short Circuit Instantaneous Adjustment Current (Ii)			10In ± 20%			10In ± 20%			10In ± 20%		10In ± 20%							
Connection			Clamp terminal			Clamp terminal			Clamp terminal		Clamp terminal		Clamp terminal		Clamp terminal			
Electrical endurance			8000			8000			8000				8000		8000			
Mechanical endurance			20000			20000			20000				20000		20000			
Optional accessories	Alarm switch	(AL)	○			○			—		○		○		○			
	Auxiliary switch	(AX)	○			○			—		○		○		○			
	Shunt trip	(SHT)	○			○			—		○		○		○			
	Under-voltage trip	(UVT)	○			○			—		○		○		○			
	Rotary handle	(EH)	●			●			—		●		●		●			
	Terminal cover	(TC)	●			●			—		●		●		●			
	Box lug	(TL)	●			●			●		●		●		●			
Trip Unit			Hydraulic magnetic			Hydraulic magnetic			Thermal magnetic		Hydraulic magnetic		Hydraulic magnetic		Hydraulic magnetic			
Tripping button			Equipped			Equipped			Equipped		Equipped		Equipped		Equipped			

Note 1. Breaking Capacity of BM100-FTD is 5kA at 380V/415V/440V
 2.* DC application MCCB trip characteristic is different from AC type, please specify when place the order.

BM100-HS



BM100-BTD



BM100-STD



BM100-LTD



40, 50, 63, 80, 100.		15, 16, 20, 25, 30, 32, 40, 50, 60, 63, 75, 80, 100			15, 16, 20, 25, 30, 32, 40, 50, 60, 63, 75, 80, 100			10, 15, 16, 20, 25, 30, 32, 40, 50, 60, 63, 70, 75, 80, 100		
3	4	2	3	4	2	3	4	2	3	4
800		800			800			800		
—		—			—			—		
500		690			690			690		
8		8			8			8		
105	140	50	75	100	50	75	100	50	75	100
165		130			130			130		
86		68			68			68		
112		90			90			90		
126		111			111			111		
35		25			25			—	25	
2.1	2.6	0.5	0.7	0.9	0.5	0.7	0.9	0.5	0.7	0.9
50		(5)			(5)			20(5)		
70		10			25			32		
85		10			25			36		
85		15			30			36		
125		25			50			85		
—		—			—			—		
—		—			—			—		
10In ± 20%		300A ± 20% (10~32A) 10In ± 20% (40~100A)			300A ± 20% (10~32A) 10In ± 20% (40~100A)			400A ± 20% (10~32A) 10In ± 20% (40~125A)		
Clamp terminal		Clamp terminal			Clamp terminal			Clamp terminal		
8000		8000			8000			8000		
20000		20000			20000			20000		
○		●			●			●		
○		●			●			●		
○		●			●			●		
—		●			●			●		
●		●			●			●		
●		●			●			●		
●		●			●			●		
Thermal magnetic		Thermal magnetic			Thermal magnetic			Thermal magnetic		
Equipped		Equipped			Equipped			Equipped		

Note 1. "●" which can be installed by client, "○" which have to be installed by manufacturer. "—" which is not available.
 Above accessories table is for 3P breaker.
 2. Ics= 50% Icu
 3. Adjustable thermal: 80%~100% In.

Index

MCCB
ELCB

ATS

ACB

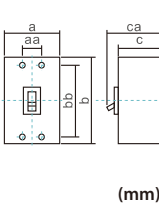
MCB

SPD

MS

MMS

Molded Case Circuit Breaker

Frame size (AF) (Inm)			125														
Type			BM125-SN			BM125-HN			BM125-LTD			BM125-HTA			BM125-RTA		
Appearance																	
Rated current In (A) at ambient temp. 40°C			10, 15, 20, 30, 40, 50, 60, 75, 100, 125.			10, 15, 20, 30, 40, 50, 60, 75, 100, 125.			15, 16, 20, 25, 30, 32, 40, 50, 60, 63, 75, 80, 100, 125.			10,15,16,20,25,30,32,40,50, 60,63,70,75,80,100,125.			10,15,16,20,25,30,32,40,50, 60,63,70,75,80,100,125.		
Number of poles (P)			2	3	4	2	3	4	2	3	4	2	3	4	2	3	4
Rated insulation voltage Ui (V)	AC	800			800			800			800			800			
	DC	—			—			—			—			—			
Rated operational voltage Ue (V AC)			500			500			690			690			690		
Uimp(kV)			8			8			8			8			8		
Dimensions		a	60	90	120	60	90	120	50	75	100	90	120	90	120		
		b	155			155			130			155			155		
		c	68			68			68			68			68		
		ca	90			90			90			90			90		
		bb	132			132			111			132			132		
		aa	30			30			25			30			30		
		(mm)															
Weight (kg)			0.5	0.7	0.9	0.5	0.7	0.9	0.5	0.7	0.9	1	1.2	1.5	1	1.2	1.5
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 Icu	AC	500V(690V)	7.5			15			(5)			25(10)			25(10)	
			440V	15			25			32			50			50	
			415V	22			25			36			50			70	
			380V	22			30			36			50			70	
			220V(240V)	30			50			85			100			100	
	DC	250V	—			—			—			—			—		
		125V	—			—			—			—			—		
Short Circuit Instantaneous Adjustment Current (Ii)			10In ± 20%			10In ± 20%			400A ± 20% (10~32A) 10In ± 20% (40~125A)			500A ± 20% (10~40A) 10In ± 20% (50~125A)			500A ± 20% (10~40A) 10In ± 20% (50~125A)		
Connection			Clamp terminal			Clamp terminal			Clamp terminal			Clamp terminal			Clamp terminal		
Electrical endurance			8000			8000			8000			8000			8000		
Mechanical endurance			20000			20000			20000			20000			20000		
Optional accessories	Alarm switch	(AL)	○			○			●			●			●		
	Auxiliary switch	(AX)	○			○			●			●			●		
	Shunt trip	(SHT)	○			○			●			●			●		
	Under-voltage trip	(UVT)	—	○	○	—	○	○	●			●			●		
	Rotary handle	(EH)	●			●			●			●			●		
	Terminal cover	(TC)	●			●			●			●			●		
	Box lug	(TL)	●			●			●								
Trip Unit			Hydraulic magnetic			Hydraulic magnetic			Thermal magnetic			"Adjustable Thermal Fixed magnetic"			"Adjustable Thermal Fixed magnetic"		
Tripping button			Equipped			Equipped			Equipped			Equipped			Equipped		

80% ~ 100% Adj. (A)

160

BM160-SN



BM160-HN



BM160-HTA



BM160-RTA



BM160-HS



125, 140, 160.			125, 140, 160.		40, 50, 60, 63, 70, 75, 80, 100, 125, 140, 150, 160		40, 50, 60, 63, 70, 75, 80, 100, 125, 140, 150, 160		125, 140, 160.	
2	3	4	3	4	3	4	3	4	3	4
800			800		800		800		690	
—			—		—		—		—	
500			500		690		690		500	
8			8		8		8		8	
75	105	140	105	140	105	140	105	140	105	140
165			165		165		165		165	
68			68		68		68		86	
92			92		92		92		112	
126			126		126		126		126	
35			35		35		35		35	
1.3	1.5	1.9	1.5	1.9	1.5	1.9	1.5	1.9	2.1	2.6
15			20		25(10)		25(10)		50	
25			32		50		50		70	
25			36		50		70		85	
30			36		50		70		85	
50			85		100		100		125	
—			—		—		—		—	
—			—		—		—		—	
1000A ± 20% (40~80A) 10In ± 20% (100~160A)			1000A ± 20% (40~80A) 10In ± 20% (100~160A)		1000A ± 20% (40~80A) 10In ± 20% (100~160A)		1000A ± 20% (40~80A) 10In ± 20% (100~160A)		1000A ± 20% (40~80A) 10In ± 20% (100~160A)	
Clamp terminal			Clamp terminal		Clamp terminal		Clamp terminal		Clamp terminal	
8000			8000		8000		8000		8000	
20000			20000		20000		20000		20000	
●			●		●		●		○	
●			●		●		●		○	
●			●		●		●		○	
●			●		●		●		—	
●			●		●		●		●	
●			●		●		●		●	
●			●		●		●		●	
Adj. thermal Fixed magnetic			Adj. thermal Fixed magnetic		Adj. thermal Fixed magnetic		Adj. thermal Fixed magnetic		Thermal magnetic	
Equipped			Equipped		Equipped		Equipped		Equipped	

Note * DC application MCCB trip characteristic is different from AC type, please specify when place the order.

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ACB

MCB

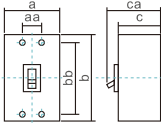
SPD

MS

MMS

Molded Case Circuit Breaker

80% ~ 100% Adj. (A)

Frame size (AF) (Inm)		250													
Type		BM250-CN			BM250-SN			BM250-HN		BM250-HTA		BM250-RTA		BM250-HS	
Appearance															
Rated current In (A) at ambient temp. 40°C		125, 150, 175, 200, 225, 250.			125, 150, 175, 200, 225, 250.			175, 200, 225, 250.		175, 200, 225, 250.		175, 200, 225, 250.		175, 200, 225, 250.	
Number of poles (P)		2	3	4	2	3	4	3	4	3	4	3	4	3	4
Rated insulation voltage Ui (V)	AC	800			800			800		800		800		800	
	DC	250*	—	—	—			—		—		—		—	
Rated operational voltage Ue (V AC)		500			500			500		690		690		500	
Uimp(kV)		8			8			8		8		8		8	
Dimensions  (mm)	a	75	105	140	75	105	140	105	140	105	140	105	140	105	140
	b	165			165			165		165		165		165	
	c	68			68			68		68		68		86	
	ca	92			92			92		92		92		112	
	bb	126			126			126		126		126		126	
	aa	35			35			35		35		35		35	
Weight (kg)		1.3	1.5	1.9	1.3	1.5	1.9	1.5	1.9	1.5	1.9	1.5	1.9	2.1	2.6
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 Icu AC	500V(690V)	7.5			7.5			20		25(10)		25(10)		50
		440V	15			15			32		50		50		70
		415V	15			15			36		50		70		85
		380V	22			22			36		50		70		85
		220V(240V)	30			30			85		100		100		125
	DC	250V	10*	—	—	—			—		—		—		—
		125V	15*	—	—	—			—		—		—		—
Short Circuit Instantaneous Adjustment Current (Ii)		10In ± 20%			10In ± 20%			10In ± 20%		10In ± 20%		10In ± 20%		10In ± 20%	
Connection		Clamp terminal			Clamp terminal			Clamp terminal		Clamp terminal		Clamp terminal		Clamp terminal	
Electrical endurance		8000			8000			8000		8000		8000		8000	
Mechanical endurance		20000			20000			20000		20000		20000		20000	
Optional accessories	Alarm switch (AL)	●			●			●		●		●		○	
	Auxiliary switch (AX)	●			●			●		●		●		○	
	Shunt trip (SHT)	●			●			●		●		●		○	
	Under-voltage trip (UVT)	●			●			●		●		●		—	
	Rotary handle (EH)	●			●			●		●		●		●	
	Terminal cover (TC)	●			●			●		●		●		●	
	Box lug (TL)	●			●			●		●		●		●	
Trip Unit		Adj. thermal Fixed magnetic			Adj. thermal Fixed magnetic			Adj. thermal Fixed magnetic		Adj. thermal Fixed magnetic		Adj. thermal Fixed magnetic		Thermal magnetic	
Tripping button		Equipped			Equipped			Equipped		Equipped		Equipped		Equipped	

Note * DC application MCCB trip characteristic is different from AC type, please specify when place the order.

400

BM400-CN



BM400-SN



BM400-HN



BM400-RN



BM400-UN



250, 300, 350, 400.

250, 300, 350, 400.

250, 300, 350, 400.

250, 300, 350, 400.

250, 300, 350, 400.

2

3

4

3

4

3

4

3

4

3

4

690

690

690

690

690

250*

—

—

—

—

—

—

500

500

500

500

500

8

8

8

8

8

140

140

185

140

185

140

185

140

185

140

185

257

257

257

257

257

103

103

103

103

103

155

155

155

155

155

194

194

194

194

194

44

44

44

44

44

5.0

5.7

7.5

5.7

7.5

5.7

7.5

5.7

7.5

5.7

7.5

14

20

25

42

65

22

30

42

55

85

25

35

50

70

85

25

35

50

70

85

35

50

85

100

125

10*

—

—

—

—

—

—

15*

—

—

—

—

—

—

10In ± 20%

10In ± 20%

10In ± 20%

10In ± 20%

10In ± 20%

Busbar /
Without busbarBusbar /
Without busbarBusbar /
Without busbarBusbar /
Without busbarBusbar /
Without busbar

7000

7000

7000

7000

7000

10000

10000

10000

10000

10000

●

●

●

●

●

●

●

●

●

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●

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Thermal magnetic

Thermal magnetic

Thermal magnetic

Thermal magnetic

Thermal magnetic

Equipped

Equipped

Equipped

Equipped

Equipped

Note 1. "●" which can be installed by client, "○" which have to be installed by manufacturer. "—" which is not available.

Above accessories table is for 3P breaker.

2. Ics= 50% Icu

3. Adjustable thermal: 80%~100% In.

4. * DC application MCCB trip characteristic is different from AC type, please specify when place the order.

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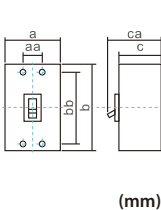
MS

MMS

BO

11

Molded Case Circuit Breaker

Frame size (AF) (Inm)			630											
Type			BM630s-STD		BM630s-LTD		BM630s-HTD		BM630s-RTD		BM630s-STA		BM630s-LTA	
Appearance														
Rated current In (A) at ambient temp. 40°C			400, 500, 600, 630.		400, 500, 600, 630.		400, 500, 600, 630.		400, 500, 600, 630.		400, 500, 600, 630.		400, 500, 600, 630.	
Number of poles (P)			3	4	3	4	3	4	3	4	3	4	3	4
Rated insulation voltage Ui (V)	AC		1000		1000		1000		1000		1000		1000	
	DC		—		—		—		—		—		—	
Rated operational voltage Ue (V AC)			690		690		690		690		690		690	
Uimp(kV)			8		8		8		8		8		8	
Dimensions  (mm)	a		140	185	140	185	140	185	140	185	140	185	140	185
	b		257		257		257		257		257		257	
	c		103		103		103		103		103		103	
	ca		155		155		155		155		155		155	
	bb		194		194		194		194		194		194	
	aa		44		44		44		44		44		44	
	Weight (kg)		5.7	7	5.7	7	5.7	7	5.7	7	5.7	7	5.7	7
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 Icu AC	500V(690V)	14(10)		20(10)		25(10)		42(15)		14(10)		20(10)	
		440V	25		36		50		70		25		36	
		415V	25		36		50		70		25		36	
		380V	25		36		50		70		25		36	
		220V(240V)	36		65		85		100		36		65	
	DC	250V	—		—		—		—		—		—	
		125V	—		—		—		—		—		—	
Short Circuit Instantaneous Adjustment Current (Ii)			10In ± 20%		10In ± 20%		10In ± 20%		10In ± 20%		10In ± 20%		10In ± 20%	
Connection			Busbar / Without busbar		Busbar / Without busbar		Busbar / Without busbar		Busbar / Without busbar		Busbar / Without busbar		Busbar / Without busbar	
Electrical endurance			7000		7000		7000		7000		7000		7000	
Mechanical endurance			15000		15000		15000		15000		15000		15000	
Optional accessories	Alarm switch	(AL)	●		●		●		●		●		●	
	Auxiliary switch	(AX)	●		●		●		●		●		●	
	Shunt trip	(SHT)	●		●		●		●		●		●	
	Under-voltage trip	(UVT)	●		●		●		●		●		●	
	Rotary handle	(EH)	●		●		●		●		●		●	
	Terminal cover	(TC)	●		●		●		●		●		●	
	Box lug	(TL)	●		●		●		●		●		●	
Trip Unit			Thermal magnetic		Thermal magnetic		Thermal magnetic		Thermal magnetic		"Adjustable Thermal Fixed magnetic"		"Adjustable Thermal Fixed magnetic"	
Tripping button			Equipped		Equipped		Equipped		Equipped		Equipped		Equipped	

Note * DC application MCCB trip characteristic is different from AC type, please specify when place the order.

630

BM630s-HTA		BM630s-RTA		BM630-CN		BM630-SN		BM630-HN		BM630-RN		BM630-UN	
													
400, 500, 600, 630.		400, 500, 600, 630.		500, 600, 630.		500, 600, 630.		500, 630.		500, 630.		500, 630.	
3	4	3	4	3	4	3	4	3	4	3	4	3	4
1000		1000		1000		1000		1000		1000		1000	
—		—		250*		250*		250*	—	—		—	
690		690		500		500		500		500		500	
8		8		8		8		8		8		8	
140	185	140	185	210	280	210	280	210	280	210	280	210	280
257		257		275		275		275		275		275	
103		103		103		103		103		103		103	
155		155		155		155		155		155		155	
194		194		243		243		243		243		243	
44		44		70		70		70		70		70	
5.7	7	5.7	7	10	13	10	13	10	13	10	13	10	13
25(10)		42(15)		14		20		25		42		65	
50		70		22		30		50		70		85	
50		70		25		35		50		70		85	
50		70		25		35		50		70		100	
85		100		35		50		85		100		125	
—		—		10*	—	20*	—	40*	—	—		—	
—		—		—		—		—		—		—	
10In ± 20%		10In ± 20%		10In ± 20%		10In ± 20%		10In ± 20%		10In ± 20%		10In ± 20%	
Busbar / Without busbar		Busbar / Without busbar		Busbar / Without busbar		Busbar / Without busbar		Busbar / Without busbar		Busbar / Without busbar		Busbar / Without busbar	
7000		7000		7000		7000		7000		7000		7000	
15000		15000		15000		15000		15000		15000		15000	
●		●		●		●		●		●		●	
●		●		●		●		●		●		●	
●		●		●		●		●		●		●	
●		●		●		●		●		●		●	
●		●		●		●		●		●		●	
●		●		●		●		●		●		●	
●		●		●		●		●		●		●	
"Adjustable Thermal Fixed magnetic"		"Adjustable Thermal Fixed magnetic"		Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic	
Equipped		Equipped		Equipped		Equipped		Equipped		Equipped		Equipped	

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MCCB
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ACB

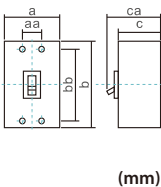
MCB

SPD

MS

MMS

Molded Case Circuit Breaker

Frame size (AF) (Inm)			800							
Type			BM800-CN		BM800-SN		BM800-HN		BM800-RN	
Appearance										
Rated current In (A) at ambient temp. 40°C			700, 800.		700, 800.		700, 800.		700, 800.	
Number of poles (P)			3	4	3	4	3	4	3	4
Rated insulation voltage Ui (V)	AC	690		690		1000		1000		
	DC	250*	—	250*	—	—	—	—	—	
Rated operational voltage Ue (V AC)			500		500		500		500	
Uimp(kV)			8		8		8		8	
Dimensions  (mm)	a	210	280	210	280	210	280	210	280	
	b	275		275		275		275		
	c	103		103		103		103		
	ca	155		155		155		155		
	bb	243		243		243		243		
	aa	70		70		70		70		
	Weight (kg)	10.5	13.5	10.5	13.5	10.5	13.5	10.5	13.5	
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 Icu AC	500V(690V)	20		25		42		65	
		440V	30		50		70		85	
		415V	35		50		70		85	
		380V	35		50		70		100	
		220V(240V)	50		85		100		125	
	DC	250V	20*	—	40*	—	—	—	—	—
		125V	—		—		—		—	
Short Circuit Instantaneous Adjustment Current (Ii)			4/6/8/10In ± 20%		4/6/8/10In ± 20%		4/6/8/10In ± 20%		4/6/8/10In ± 20%	
Connection			Busbar / Without busbar		Busbar / Without busbar		Busbar / Without busbar		Busbar / Without busbar	
Electrical endurance			7000		7000		7000		7000	
Mechanical endurance			10000		10000		10000		10000	
Optional accessories	Alarm switch	(AL)	●		●		●		●	
	Auxiliary switch	(AX)	●		●		●		●	
	Shunt trip	(SHT)	●		●		●		●	
	Under-voltage trip	(UVT)	●		●		●		●	
	Rotary handle	(EH)	●		●		●		●	
	Terminal cover	(TC)	●		●		●		●	
	Box lug	(TL)	●		●		●		●	
Trip Unit			Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic	
Tripping button			Equipped		Equipped		Equipped		Equipped	

Note * DC application MCCB trip characteristic is different from AC type, please specify when place the order.

1000	1200	1600
BM1000-HS	BM1200-HS	BM1600-HS
		
1000	1200	1400, 1600.
3	3	3
1000	1000	1000
—	—	—
500	500	500
8	8	8
210	210	210
406	406	406
140	140	140
190	190	190
375	375	375
70	70	70
23	23	23
65	65	65
85	85	85
85	85	85
100	100	100
130	130	130
—	—	—
—	—	—
8000A ± 20%	8000A ± 20%	8000A ± 20%
Busbar	Busbar	Busbar
2000	1500	1000
5000	5000	5000
○	○	○
○	○	○
○	○	○
○	○	○
—	—	—
—	—	—
●	●	●
Fixed thermal Adj. magnetic	Fixed thermal Adj. magnetic	Fixed thermal Adj. magnetic
Equipped	Equipped	Equipped

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MCCB
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ACB

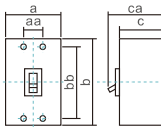
MCB

SPD

MS

MMS

Molded Case Circuit Breaker (BMA Series)

Frame size (AF) (Inm)			125			160			250			400		
Model			BMA 125-STA	BMA 125-LTA	BMA 125-HTA	BMA 160-STA	BMA 160-LTA	BMA 160-HTA	BMA 250-STA	BMA 250-LTA	BMA 250-HTA	BMA 400-LTA	BMA 400-HTA	BMA 400-RTA
Appearance														
Rated current In (A) at ambient temp. 40°C			15,16,20,25,30,32,40, 50,60,63,75,80,100,125A			40,50,60,63,70,75,80, 100,125,140,150,160A			175,200,225,250A			250, 300, 350, 400A		
Number of poles (P)			3		4	3		4	3		4	3		4
Rated insulation voltage Ui (V)		AC	800			800			800			800		
Rated operational voltage Ue(V AC)			690			690			690			690		
Uimp(kV)			8			8			8			8		
Dimensions		a	90	120	105	140	105	140	140	185				
		b	155	155	165	165	165	165	257	257				
		c	68	68	68	68	68	68	103	103				
		ca	92	92	92	92	92	92	155	155				
		bb	132	132	126	126	126	126	194	194				
		aa	30	30	35	35	35	35	44	44				
		(mm)												
Weight (kg)			0.7		0.9	1.5		1.9	1.5		1.9	5.7		7.5
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 AC Icu	690V	8 kA	8 kA	10 kA	8 kA	8 kA	10 kA	8 kA	8 kA	10 kA	8 kA	10 kA	15 kA
		415V	25 kA	36 kA	50 kA	25 kA	36 kA	50 kA	25 kA	36 kA	50 kA	36 kA	50 kA	70 kA
		380V	25 kA	36 kA	50 kA	25 kA	36 kA	50 kA	25 kA	36 kA	50 kA	36 kA	50 kA	70 kA
		220V(240V)	85 kA	85 kA	100 kA	85 kA	85 kA	100 kA	85 kA	85 kA	100 kA	70 kA	85 kA	100 kA
Short Circuit Instantaneous Adjustment Current (Ii)			10In ± 20%			10In ± 20%			10In ± 20%			10In ± 20%		
Connection			Clamp terminal			Clamp terminal			Clamp terminal			Busbar		
Electrical endurance			8000			8000			8000			7000		
Mechanical endurance			20000			20000			20000			15000		
Optional accessories	Alarm switch (AL)	●	●	●	●	●	●	●	●	●	●	●	●	●
	Auxiliary switch (AX)	●	●	●	●	●	●	●	●	●	●	●	●	●
	Shunt trip (SHT)	●	●	●	●	●	●	●	●	●	●	●	●	●
	Under-voltage trip (UVT)	●	●	●	●	●	●	●	●	●	●	●	●	●
	Rotary handle (EH)	●	●	●	●	●	●	●	●	●	●	●	●	●
	Terminal cover (TC)	●	●	●	●	●	●	●	●	●	●	●	●	●
Trip Unit			Adjustable Thermal Fixed Magnetic			Adjustable Thermal Fixed Magnetic			Adjustable Thermal Fixed Magnetic			Adjustable Thermal Fixed Magnetic		
Tripping button			Equipped			Equipped			Equipped			Equipped		

Note 1. Ics=100%Icu

630

BMA630s-STD



BMA630s-LTD



BMA630s-HTD



BMA630s-RTD

400, 500,
600, 630A400, 500,
600, 630A400, 500,
600, 630A400, 500,
600, 630A

3

4

3

4

3

4

3

4

1000

1000

1000

1000

690

690

690

690

8

8

8

8

140

185

140

185

140

185

140

185

257

257

257

257

103

103

103

103

155

155

155

155

194

194

194

194

44

44

44

44

5.7

7

5.7

7

5.7

7

5.7

7

10 kA

10 kA

10 kA

15 kA

25 kA

36 kA

50 kA

70 kA

25 kA

36 kA

50 kA

70 kA

36 kA

65 kA

85 kA

100 kA

10In ± 20%

10In ± 20%

10In ± 20%

10In ± 20%

Clamp terminal

Clamp terminal

Clamp terminal

Clamp terminal

7000

7000

7000

7000

15000

15000

15000

15000

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Thermal magnetic

Thermal magnetic

Thermal magnetic

Thermal magnetic

Equipped

Equipped

Equipped

Equipped

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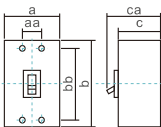
MS

MMS

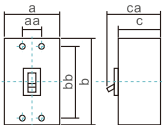
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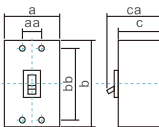
Molded Case Circuit Breaker (BMA Series)

Frame size (AF) (Inm)			630							
Model			BMA630s-STA		BMA630s-LTA		BMA630s-HTA		BMA630s-RTA	
Appearance										
Rated current In (A) at ambient temp. 40°C			400, 500, 600, 630A		400, 500, 600, 630A		400, 500, 600, 630A		400, 500, 600, 630A	
Number of poles (P)			3	4	3	4	3	4	3	4
Rated insulation voltage Ui (V)		AC	1000		1000		1000		1000	
Rated operational voltage Ue(V AC)			690		690		690		690	
Uimp(kV)			8		8		8		8	
Dimensions		a	140	185	140	185	140	185	140	185
		b	257		257		257		257	
		c	103		103		103		103	
		ca	155		155		155		155	
		bb	194		194		194		194	
		aa	44		44		44		44	
		(mm)								
Weight (kg)			5.7	7	5.7	7	5.7	7	5.7	7
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 Icu AC	690V	10 kA		10 kA		10 kA		15 kA	
		415V	25 kA		36 kA		50 kA		70 kA	
		380V	25 kA		36 kA		50 kA		70 kA	
		220V(240V)	36 kA		65 kA		85 kA		100 kA	
Short Circuit Instantaneous Adjustment Current (Ii)			10In ± 20%		10In ± 20%		10In ± 20%		10In ± 20%	
Connection			Clamp terminal		Clamp terminal		Clamp terminal		Clamp terminal	
Electrical endurance			7000		7000		7000		7000	
Mechanical endurance			15000		15000		15000		15000	
Optional accessories	Alarm switch	(AL)	●		●		●		●	
	Auxiliary switch	(AX)	●		●		●		●	
	Shunt trip	(SHT)	●		●		●		●	
	Under-voltage trip	(UVT)	●		●		●		●	
	Rotary handle	(EH)	●		●		●		●	
	Terminal cover	(TC)	●		●		●		●	
Trip Unit			Adjustable Thermal Fixed magnetic		Adjustable Thermal Fixed magnetic		Adjustable Thermal Fixed magnetic		Adjustable Thermal Fixed magnetic	
Tripping button			Equipped		Equipped		Equipped		Equipped	

Note 1. Ics=100%Icu

Frame size (AF) (Inm)			630				630				800				800				
Model			BMA 630-HTD		BMA 630-RTD		BMA 630-HTA		BMA 630-RTA		BMA 800-HTD		BMA 800-RTD		BMA 800-HTA		BMA 800-RTA		
Appearance																			
Rated current In (A) at ambient temp. 40°C			500, 600, 630A				500, 600, 630A				700, 800A				700, 800A				
Number of poles (P)			3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	
Rated insulation voltage Ui (V)		AC	1000				1000				1000				1000				
Rated operational voltage Ue(V AC)			690				690				690				690				
Uimp(kV)			8				8				8				8				
Dimensions			a	210	280	210	280	210	280	210	280	210	280	210	280	210	280	210	280
			b	275				275				275				275			
			c	103				103				103				103			
			ca	155				155				155				155			
			cb	243				243				243				243			
			bb	243				243				243				243			
			aa	70				70				70				70			
Weight (kg)			10	13	10	13	10	13	10	13	10	13	10	13	10	13	10	13	
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 AC	690V	10kA		15kA		10kA		15kA		10kA		15kA		10kA		15kA		
		415V	50kA		70kA		50kA		70kA		50kA		70kA		50kA		70kA		
		380V	50kA		70kA		50kA		70kA		50kA		70kA		50kA		70kA		
		220V(240V)	85kA		100kA		85kA		100kA		85kA		100kA		85kA		100kA		
Short Circuit Instantaneous Adjustment Current (Ii)			10In ± 20%				10In ± 20%				10In ± 20%				Adj. (4, 6, 8, 10)In ± 20%				
Connection			Busbar				Busbar				Busbar				Busbar				
Electrical endurance			7000				7000				7000				7000				
Mechanical endurance			15000				15000				15000				15000				
Optional accessories	Alarm switch (AL)		●		●		●		●		●		●		●		●		
	Auxiliary switch (AX)		●		●		●		●		●		●		●		●		
	Shunt trip (SHT)		●		●		●		●		●		●		●		●		
	Under-voltage trip (UVT)		●		●		●		●		●		●		●		●		
	Rotary handle (EH)		●		●		●		●		●		●		●		●		
	Terminal cover (TC)		●		●		●		●		●		●		●		●		
Trip Unit			Fixed Thermal Adjustable Magnetic				Adjustable Thermal Fixed magnetic				Fixed Thermal Adjustable Magnetic				Adjustable Thermal Fixed magnetic				
Tripping button			Equipped		Equipped		Equipped		Equipped		Equipped		Equipped		Equipped		Equipped		

Molded Case Circuit Breaker (BMA Series)

Frame size (AF) (Inm)			1000				1250				1600			
Model			BMA 1000-HED		BMA 1000-RED		BMA 1250-HED		BMA 1250-RED		BMA 1600-HED		BMA 1600-RED	
Appearance														
Rated current In (A) at ambient temp. 40°C			1000A				1250A				1600A			
Number of poles (P)			3	4	3	4	3	4	3	4	3	4	3	4
Rated insulation voltage Ui (V)		AC	1000				1000				1000			
Rated operational voltage Ue(V AC)			690				690				690			
Uimp(kV)			8				8				8			
Dimensions	 (mm)	a	210	280	210	280	210	280	210	280	210	280	210	280
		b	327				327				327			
		c	141				141				141			
		ca	205				205				205			
		bb	200				200				200			
		aa	199	339	199	339	199	339	199	339	199	339	199	339
Weight (kg)			13.3	17.2	13.3	17.2	13.3	17.2	13.3	17.2	13.3	17.2	13.3	17.2
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 AC Icu	690V	35		45		35		45		35		45	
		415V	50		70		50		70		50		70	
		380V	50		70		50		70		50		70	
		220V(240V)	—	—	—	—	—	—	—	—	—	—	—	—
Short Circuit Instantaneous Adjustment Current (Ii)			—				—				—			
Connection			Busbar				Busbar				Busbar			
Electrical endurance			7000				7000				7000			
Mechanical endurance			15000				15000				15000			
Optional accessories	Alarm switch (AL)		●		●		●		●		●		●	
	Auxiliary switch (AX)		●		●		●		●		●		●	
	Shunt trip (SHT)		●		●		●		●		●		●	
	Under-voltage trip (UVT)		—		—		—		—		—		—	
	Rotary handle (EH)		●		●		●		●		●		●	
	Terminal cover (TC)		—		—		—		—		—		—	
Trip Unit			Electronic				Electronic				Electronic			
Tripping button			Equipped		Equipped		Equipped		Equipped		Equipped		Equipped	

Condition:

1. Operation Temp.: $-25^{\circ}\text{C} \sim +70^{\circ}\text{C}$
2. Storage Temp.: $-40^{\circ}\text{C} \sim 85^{\circ}\text{C}$
3. Altitude: $\leq 2000\text{m}$
4. Pollution class: 3
5. Category: B
6. Relative humidity: $\leq 90\%$

Neutral Protection:

4P4D: 100% In 3D+N/2: 50% In 4P3D: No protection

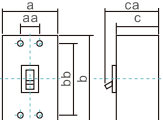


1. Overload Setting Knob
($I_r=0.4/0.45/0.5/0.6/0.63/0.7/0.8/0.9/1/\text{OFF}$)
2. Overload Tripping Time Setting Knob
($T_r=0.5/1/2/4/8/12/16/20/24/\text{OFF}$)
3. ($I_{sd}=1.5/2/2.5/3/4/5/6/8/10/\text{OFF}$)
4. (I_{2t} on: $T_{sd}=0.1/0.2/0.3/0.4$; I_{2t} off: $T_{sd}=0/0.1/0.2/0.3/0.4$)
5. Instantaneous Setting Knob
($I_i=2/3/4/6/8/10/12/15/\text{OFF}$)
6. Alarm indicator: Overload (red light)

Protection												
Long-time												
Current setting(A)		Ir=Inx	0.4	0.45	0.5	0.6	0.63	0.7	0.8	0.9	1	OFF
		Tr (s)	0.5	1	2	4	8	12	16	20	24	OFF
Time Delay (s)		1.5xIr	8	16	32	64	128	192	256	320	384	
Accuracy: ±20%		6xIr	0.5	1	2	4	8	12	16	20	24	
		7.2xIr	0.35	0.7	1.39	2.78	5.56	8.3	11.1	13.9	16.7	
Short-time												
Current setting(A)	Accuracy: ±10%	I _{sd} =I _{rx}	1.5	2	2.5	3	4	5	6	8	10	OFF
Time Delay Tsd(s)		I ² t off	0	0.1	0.2	0.3	0.4					
		I ² t on		0.1	0.2	0.3	0.4					
Time Delay (ms) at 10xIr (I ₂ t off or on)	Tsd(Max. resettable time)		20	80	140	230	350					
	Tsd(Max. trip time)		80	140	200	320	500					
Instantaneous												
Current setting(A)	Accuracy: ±10%	I _i =I _{rx}	2	3	4	6	8	10	12	15	OFF	
Tripping time		60 ±20 ms										



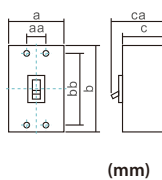
Molded Case Circuit Breaker (Electronic trip Unit)

Frame size (AF)			100				160				250				400			
Model			BMA100-HED		BMA100-RED		BMA160-HED		BMA160-RED		BMA250-HED		BMA250-RED		BMA400-HED		BMA400-RED	
Rated current (A)			40, 100		40, 100		160		160		250		250		400		400	
Pole (P)			3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4
Rated insulation voltage Ui (V)			AC1000		AC1000		AC1000		AC1000		AC 1000		AC 1000		AC 1000		AC 1000	
Dimensions (mm)		a	105	140	105	140	105	140	105	140	105	140	105	140	140	185	140	185
		b	165		165		165		165		165		165		257		257	
		c	86		86		86		86		86		86		103		103	
		ca	110		110		110		110		110		110		155		155	
		bb	126		126		126		126		126		126		194		194	
		aa	35		35		35		35		35		35		44		44	
Weight (kg)			1.8	2.4	1.8	2.4	1.8	2.4	1.8	2.4	1.8	2.4	1.8	2.4	5.7	7.5	5.7	7.5
Breaking capacity (kA), Ics=Icu IEC 60947-2			AC690V		10		15		10		15		10		15		10	
			AC500V		30		50		30		50		30		50		30	
			AC440V		42		65		42		65		42		65		42	
			AC380V		50		70		50		70		50		70		50	
			AC220V		85		100		85		100		85		100		85	
Wiring			Clamp terminal				Clamp terminal				Clamp terminal				Busbar			
Optional accessories	Alarm switch(AL)		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Auxiliary switch(AX)		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Shunt trip(SHT)		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Under-voltage trip(UVT)		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Rotary handle(EH)		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Extended rotary handle(MA)		—	—	—	—	—	—	—	—	—	—	—	—	—	●	●	●
	Motor Operation Device(MT)		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Plug-in back type(PGI)		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Plug-in front type(PGIF)		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Locking Device(FHL)		○	○	○	○	○	○	○	○	○	○	○	○	○	●	●	●
Terminal cover			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Trip unit			Electronic		Electronic		Electronic		Electronic		Electronic		Electronic		Electronic		Electronic	
Trip button			Equipped		Equipped		Equipped		Equipped		Equipped		Equipped		Equipped		Equipped	

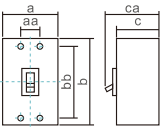
Note: "●" which can be installed by client, "○" which have to installed by manufacturer.

630				800				1000				1250				1600			
BMA630-HED		BMA630-RED		BMA800-HED		BMA800-RED		BMA1000-HED		BMA1000-RED		BMA1250-HED		BMA1250-RED		BMA1600-HED		BMA1600-RED	
630		630		800		800		1000		1000		1250		1250		1600		1600	
3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4
AC 1000		AC 1000		AC 1000		AC 1000		AC 1000		AC 1000		AC 1000		AC 1000		AC 1000		AC 1000	
210	280	210	280	210	280	210	280	210	280	210	280	210	280	210	280	210	280	210	280
275		275		275		275		327		327		327		327		327		327	
103		103		103		103		141		141		141		141		141		141	
155		155		155		155		205		205		205		205		205		205	
243		243		243		243		200		200		200		200		200		200	
70		70		70		70		199		339		199		339		199		339	
10	13	10	13	10.5	13.5	10.5	13.5	13.7	17.2	13.7	17.2	13.7	17.2	13.7	17.2	13.7	17.2	13.7	17.2
10		15		10		15		35		45		35		45		35		45	
30		50		30		50		—		—		—		—		—		—	
42		65		42		65		50		70		50		70		50		70	
50		70		50		70		50		70		50		70		50		70	
85		100		85		100		—		—		—		—		—		—	
Busbar				Busbar				Busbar				Busbar				Busbar			
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
○	○	○	○	○	○	○	○	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
●	●	●	●	●	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—
●	●	●	●	●	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—
Electronic		Electronic		Electronic		Electronic		Electronic		Electronic		Electronic		Electronic		Electronic		Electronic	
Equipped		Equipped		Equipped		Equipped		Equipped		Equipped		Equipped		Equipped		Equipped		Equipped	

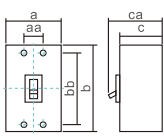
Earth Leakage Circuit Breaker

Frame size (AF) (Inm)			50		100				
Model			BL50-SN		BL100-SN		BL100-HN		
Appearance									
Rated current In (A) at ambient temp. 40 °C			15, 20, 30, 40, 50.		15, 20, 30, 40, 50, 60, 75, 100.		15, 20, 30, 40, 50, 60, 75, 100.		
Phase & wire (P)			1ø2W, 3ø3W	3ø4W	1ø2W, 3ø3W	3ø4W	1ø2W, 3ø3W	3ø4W	
Number of poles (P)			3	4	3	4	3	4	
Rated voltage (VAC)			230, 400.		230, 400.		230, 400.		
High speed	Rated current sensitivity I Δ n AC type (mA)		30-100-500mA (adj) *15mA, *30mA, *100mA *100-300-500mA (adj)		30-100-500mA (adj) *15mA, *30mA, *100mA *100-300-500mA (adj)		30-100-500mA (adj) *15mA, *30mA, *100mA *100-300-500mA (adj)		
	Rated current sensitivity I Δ n A type (mA)		30-100-300-500mA(adj)		30-100-300-500mA(adj)		30-100-300-500mA(adj)		
	2I Δ n operating time (S)		0.1		0.1		0.1		
	5I Δ n operating time (S)		0.04		0.04		0.04		
Delay	Rated current sensitivity I Δ n AC type (mA)		100-300-500mA(adj)		100-300-500mA(adj)		100-300-500mA(adj)		
	Rated current sensitivity I Δ n A type (mA)		100-300-500-1000mA (adj)		100-300-500-1000mA (adj)		100-300-500-1000mA (adj)		
	2I Δ n operating time (S)		0.1- 0.4- 0.8- 2.0 adjustable		0.1- 0.4- 0.8- 2.0 adjustable		0.1- 0.4- 0.8- 2.0 adjustable		
	2I Δ n max. non-operating time (S)		0, 0.2, 0.4, 1.0		0, 0.2, 0.4, 1.0		0, 0.2, 0.4, 1.0		
	Leakage detection mode		Mechanical push-button		Mechanical push-button		Mechanical push-button		
Dimensions	 (mm)		a	75	100	90	120	90	120
			b	130		155		155	
			c	68		68		68	
			ca	90		90		90	
			bb	111		132		132	
			aa	25		30		30	
			Weight (kg)		0.7	0.9	1.5	1.8	1.5
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 Icu AC	440V	7.5		10		25		
		380V	7.5		15		30		
		220V	10		25		50		
Connection			Clamp terminal		Clamp terminal		Clamp terminal		
Electrical endurance			8000		8000		8000		
Mechanical endurance			20000		20000		20000		
Optional accessories	Alarm switch (AL)		○		○		○		
	Auxiliary switch (AX)		○		○		○		
	Shunt trip (SHT)		○		○		○		
	Under-voltage trip (UVT)		—		○		○		
	Rptary handle (EH)		●		●		●		
	Terminal cover (TC)		●		●		●		
	Leakage alarm module (AM)		—		○		○		
	Box lug (TL)		●		●		●		
Trip Unit			Hydraulic magnetic		Hydraulic magnetic		Hydraulic magnetic		
Tripping button			Equipped		Equipped		Equipped		

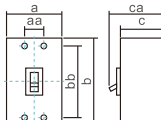
- Note
1. "●" which can be installed by client, "○" which have to be installed by manufacturer. "—" which is not available.
 2. Specify default rated current sensitivity when place the order.
 3. Ics= 50% Icu
 4. Adjustable thermal: 80%~100% In.
 5. Specify, when order delay type rated current sensitivity 30-100-500mA.

Frame size (AF) (Inm)		160		250		400						
Model		BL160-SN		BL250-SN		BL400-SN		BL400-HN		BL400-RN		
Appearance												
Rated current In (A) at ambient temp. 40 °C		125, 140, 160.		175, 200, 225, 250.		250, 300, 350, 400.		250, 300, 350, 400.		250, 300, 350, 400.		
Phase & wire (P)		1ø2W, 3ø3W	3ø4W	1ø2W, 3ø3W	3ø4W	1ø2W, 3ø3W	3ø4W	1ø2W, 3ø3W	3ø4W	1ø2W, 3ø3W	3ø4W	
Number of poles (P)		3	4	3	4	3	4	3	4	3	4	
Rated voltage (VAC)		230, 400.		230, 400.		230, 400.		230, 400.		230, 400.		
High speed	Rated current sensitivity IΔn AC type (mA)	30-100-500mA (adj) *15mA, *30mA, *100mA *100-300-500mA (adj)		30-100-500mA (adj) *15mA, *30mA, *100mA *100-300-500mA (adj)		30-100-500mA (adj) *15mA, *30mA, *100mA *100-300-500mA (adj)		30-100-500mA (adj) *15mA, *30mA, *100mA *100-300-500mA (adj)		30-100-500mA (adj) *15mA, *30mA, *100mA *100-300-500mA (adj)		
	Rated current sensitivity IΔn A type (mA)	30-100-300-500mA(adj)		30-100-300-500mA(adj)		30-100-300-500mA(adj)		30-100-300-500mA(adj)		30-100-300-500mA(adj)		
	2IΔn operating time (S)	0.1		0.1		0.1		0.1		0.1		
	5IΔn operating time (S)	0.04		0.04		0.04		0.04		0.04		
Delay	Rated current sensitivity IΔn AC type (mA)	100-300-500mA(adj)		100-300-500mA(adj)		100-300-500mA(adj)		100-300-500mA(adj)		100-300-500mA(adj)		
	Rated current sensitivity IΔn A type (mA)	100-300-500-1000mA (adj)		100-300-500-1000mA (adj)		100-300-500-1000mA (adj)		100-300-500-1000mA (adj)		100-300-500-1000mA (adj)		
	2IΔn operating time (S)	0.1- 0.4- 0.8- 2.0 adjustable		0.1- 0.4- 0.8- 2.0 adjustable		0.1- 0.4- 0.8- 2.0 adjustable		0.1- 0.4- 0.8- 2.0 adjustable		0.45- 1.0- 2.0 adjustable		
	2IΔn max. non-operating time (S)	0, 0.2, 0.4, 1.0		0, 0.2, 0.4, 1.0		0, 0.2, 0.4, 1.0		0, 0.2, 0.4, 1.0		0.1, 0.5, 1.0		
	Leakage detection mode	Mechanical push-button		Mechanical push-button		Mechanical push-button		Mechanical push-button		Mechanical push-button		
Dimensions	 (mm)	a	105	140	105	140	140	185	140	185	140	185
		b	165		165		257		257		257	
		c	68		68		103		103		103	
		ca	92		92		155		155		155	
		bb	126		126		194		194		194	
		aa	35		35		44		44		44	
	Weight (kg)		1.7	2.3	1.7	2.3	6.6	8.4	6.6	8.4	5.7	7.5
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 Icu AC	440V	25		25		30		42		55	
		380V	30		30		35		50		70	
		220V	50		50		50		85		100	
Connection		Clamp terminal		Clamp terminal		Busbar		Busbar		Busbar		
Electrical endurance		8000		8000		7000		7000		7000		
Mechanical endurance		20000		20000		10000		10000		10000		
Optional accessories	Alarm switch (AL)	●		●		●		●		●		
	Auxiliary switch (AX)	●		●		●		●		●		
	Shunt trip (SHT)	●		●		●		●		●		
	Under-voltage trip (UVT)	●		●		●		●		●		
	Rptary handle (EH)	●		●		●		●		●		
	Terminal cover (TC)	●		●		●		●		●		
	Leakage alarm module (AM)	○		○		○		○		○		
	Box lug (TL)	●		●		●		●		●		
Trip Unit		Adj. thermal Fixed magnetic		Adj. thermal Fixed magnetic		Thermal magnetic		Thermal magnetic		Thermal magnetic		
Tripping button		Equipped		Equipped		Equipped		Equipped		Equipped		

Earth Leakage Circuit Breaker

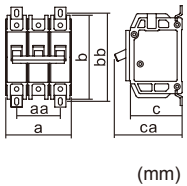
Frame size (AF) (Inm)			400		630				630		
Model			BL400-UN		BL630-HN		BL630-RN		BL630-UN		
Appearance											
Rated current In (A) at ambient temp. 40℃			250, 300, 350, 400.		500, 630.		500, 630.		500, 630.		
Phase & wire (P)			1ø2W, 3ø3W	3ø4W	1ø2W, 3ø3W	3ø4W	1ø2W, 3ø3W	3ø4W	1ø2W, 3ø3W	3ø4W	
Number of poles (P)			3	4	3	4	3	4	3	4	
Rated voltage (VAC)			230, 400.		230, 400.		230, 400.		230, 400.		
High speed	Rated current sensitivity I Δ n AC type (mA)		30-100-500mA (adj) *15mA, *30mA, *100mA *100-300-500mA (adj)		100-300-500mA (adj)		100-300-500mA (adj)		100-300-500mA (adj)		
	Rated current sensitivity I Δ n A type (mA)		30-100-300-500mA(adj)		100-300-500-1000mA(adj)		100-300-500-1000mA(adj)		100-300-500-1000mA(adj)		
	2I Δ n operating time (S)		0.1		0.1		0.1		0.1		
	5I Δ n operating time (S)		0.04		0.04		0.04		0.04		
Delay	Rated current sensitivity I Δ n AC type (mA)		100-300-500mA(adj)		100-300-500mA(adj)		100-300-500mA(adj)		100-300-500mA(adj)		
	Rated current sensitivity I Δ n A type (mA)		100-300-500-1000mA(adj)		100-300-500-1000mA(adj)		100-300-500-1000mA(adj)		100-300-500-1000mA(adj)		
	2I Δ n operating time (S)		0.45- 1.0- 2.0 adjustable		0.45- 1.0- 2.0 adjustable		0.45- 1.0- 2.0 adjustable		0.45- 1.0- 2.0 adjustable		
	2I Δ n max. non-operating time (S)		0.1, 0.5, 1.0		0.1, 0.5, 1.0		0.1, 0.5, 1.0		0.1, 0.5, 1.0		
Leakage detection mode			Mechanical push-button		Mechanical push-button		Mechanical push-button		Mechanical push-button		
Dimensions	 (mm)		a	140	185	210	280	210	280	210	280
			b	257		257		257		257	
			c	103		103		103		103	
			ca	155		155		155		155	
			bb	194		243		243		243	
			aa	44		70		70		70	
			Weight (kg)		5.7	7.5	10.0	13.0	10.0	13.0	10.0
Rated breaking capacity (kA)	IEC 60947-2	440V	85		50		70		85		
	EN 60947-2	380V	85		50		70		100		
	Icu	220V	125		85		100		125		
Connection			Busbar		Busbar		Busbar		Busbar		
Electrical endurance			7000		7000		7000		7000		
Mechanical endurance			10000		10000		10000		10000		
Optional accessories	Alarm switch	(AL)	●		●		●		●		
	Auxiliary switch	(AX)	●		●		●		●		
	Shunt trip	(SHT)	●		●		●		●		
	Under-voltage trip	(UVT)	●		●		●		●		
	Rptary handle	(EH)	●		●		●		●		
	Terminal cover	(TC)	●		●		●		●		
	Leakage alarm module	(AM)	○		○		○		○		
Box lug			(TL)		●		●		●		
Trip Unit			Thermal magnetic		Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic		
Tripping button			Equipped		Equipped		Equipped		Equipped		

- Note
1. "●" which can be installed by client, "○" which have to be installed by manufacturer. "—" which is not available.
 2. Specify default rated current sensitivity when place the order.
 3. Ics= 50% Icu
 4. Adjustable thermal: 80%~100% In.
 5. Specify, when order delay type rated current sensitivity 30-100-500mA.

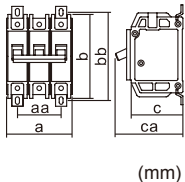
Frame size (AF) (Inm)			800					
Model			BL800-SN		BL800-HN		BL800-RN	
Appearance								
Rated current In (A) at ambient temp. 40 °C			700, 800.		700, 800.		700, 800.	
Phase & wire (P)			1ø2W, 3ø3W	3ø4W	1ø2W, 3ø3W	3ø4W	1ø2W, 3ø3W	3ø4W
Number of poles (P)			3	4	3	4	3	4
Rated voltage (VAC)			230, 400.		230, 400.		230, 400.	
High speed	Rated current sensitivity I Δ n AC type (mA)		100-300-500mA (adj)		100-300-500mA (adj)		100-300-500mA (adj)	
	Rated current sensitivity I Δ n A type (mA)		100-300-500-1000mA(adj)		100-300-500-1000mA(adj)		100-300-500-1000mA(adj)	
	2I Δ n operating time (S)		0.1		0.1		0.1	
	5I Δ n operating time (S)		0.04		0.04		0.04	
Delay	Rated current sensitivity I Δ n AC type (mA)		100-300-500mA(adj)		100-300-500mA(adj)		100-300-500mA(adj)	
	Rated current sensitivity I Δ n A type (mA)		100-300-500-1000mA(adj)		100-300-500-1000mA(adj)		100-300-500-1000mA(adj)	
	2I Δ n operating time (S)		0.45- 1.0- 2.0 adjustable		0.45- 1.0- 2.0 adjustable		0.45- 1.0- 2.0 adjustable	
	2I Δ n max. non-operating time (S)		0.1, 0.5, 1.0		0.1, 0.5, 1.0		0.1, 0.5, 1.0	
	Leakage detection mode		Mechanical push-button		Mechanical push-button		Mechanical push-button	
Dimensions	 (mm)	a	210	280	210	280	210	280
		b	257		257		257	
		c	103		103		103	
		ca	155		155		155	
		bb	243		243		243	
		aa	70		70		70	
		Weight (kg)		10.5	13.5	10.5	13.5	10.5
Rated breaking capacity (kA)	IEC 60947-2	440V	50		70		85	
	EN 60947-2	380V	50		70		100	
	Icu AC	220V	85		100		125	
Connection			Busbar		Busbar		Busbar	
Electrical endurance			7000		7000		7000	
Mechanical endurance			10000		10000		10000	
Optional accessories	Alarm switch	(AL)	●		●		●	
	Auxiliary switch	(AX)	●		●		●	
	Shunt trip	(SHT)	●		●		●	
	Under-voltage trip	(UVT)	●		●		●	
	Rptary handle	(EH)	●		●		●	
	Terminal cover	(TC)	●		●		●	
	Leakage alarm module	(AM)	○		○		○	
	Box lug	(TL)	●		●		●	
Trip Unit			Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic	
Tripping button			Equipped		Equipped		Equipped	

Molded Case Circuit Breaker

Bolt on type

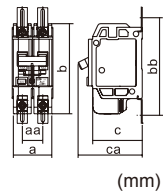
Frame (AF)			100			50	100			50	100			50	100					
Type			BP			BPH			BKH			BKS								
Appearance																				
Rated Voltage (A.C) #1			110	220*	220	110	220*	220	110/220*	380	110/220*	220								
Rated Current In (A) At Ambient Temp. 40°C			10*, 15, 20, 30, 40, 50, 60, 75, 100.			15, 20, 30, 40, 50.			15, 20, 30, 40, 50, 60, 75, 100.			15, 20, 30, 40, 50, 60, 75, 100.			15, 20, 30, 40, 50, 60, 75, 100.					
Number of poles (P)			1	2	3	1	2	3	1	2	3	1	2	3						
Dimensions		a	25	50	75	25	50	75	25	50	75	25	50	75						
		b	95			95			95			95								
		c	58.5			58.5			58.5			58.5								
		ca	77.5			77.5			77.5			77.5								
		bb	100			100			100			100								
		aa	0	25	50	0	25	50	0	25	50	0	25	50	0	25	50			
		(mm)																		
Weight (kg)			0.15	0.31	0.46	0.2	0.4	0.6	0.22	0.44	0.66	0.22	0.44	0.66						
Rated Breaking Capacity (kA) CNS 14816-2 Icu AC #2 #3	110V / 120V*	5	—	—	10	—	—	15	—	—	25/22**	—								
	220V / 240V*	—	5***	5	—	10	10	10	15	—	—	25/22**								
	380V / 400V*	—	—	—	—	—	—	—	10	—	—	—								
Trip Unit			Thermal Magnetic			Thermal Magnetic			Thermal Magnetic			Thermal Magnetic								

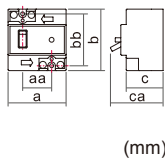
Plug in type

Frame (AF)			50	100		50			100		50	100												
Type			BL			BLH			BLS		BKL													
Appearance																								
Rated Voltage (A.C) #1			110/220*		220		110/220*		220		110/220*		380											
Rated Current In (A) At Ambient Temp. 40 °C			15, 20, 30 40, 50.		15, 20, 30, 40, 50 60, 75, 100.		15, 20, 30 40, 50.		15, 20, 30, 40, 50. 60, 75, 100.		15, 20, 30 40, 50.		15, 20, 30, 40, 50 60, 75, 100.											
Number of poles (P)			1		2		3		2		3		1		2		3							
Dimensions		a	25		50		75		25		50		75		25		50		75					
		b	74					74					74					79						
		c	60.5					60.5					60.5					61						
		ca	74					74					74					77.5						
		bb	—					—					—					—						
		aa	0		25		50		0		25		50		25		50		0		25		50	
		(mm)																						
Weight (kg)			0.13		0.26		0.39		0.13		0.26		0.39		0.33		0.53		0.18		0.36		0.54	
Rated Breaking Capacity (kA) CNS 14816-2 Icu AC	110V / 120V*		5		—		10		—		—		—		15		—							
	220V / 240V*		—		5		—		10		—		10		10		15							
	380V / 400V*		—		—		—		—		—		—		—		10							
Trip Unit			Thermal Magnetic					Thermal Magnetic					Thermal Magnetic					Thermal Magnetic						

Note 1. *** 1 phase 3 wiring; L-L: 220V, L-N: 110V.
2. *** Rated Breaking Capacity: asym/sym.
3. **** BP 1P 220V 5kA Rated Current:15, 20, 30, 40, 50A.

Earth Leakage Circuit Breaker | Earth Leakage, Overload, and Short Circuit Protection

Frame (AF)	50		50		50		50		50		
Type	BL-50L		BL-50UL		BLP-50L		BLP-50UL		BL-50H		
Appearance											
Rated Current In (A) At Ambient Temp. 40℃	15, 20, 30, 40, 50.										
Phase & Wire	1Φ2W										
Number of poles (P)	2P1E	2P2E	2P1E	2P2E	2P1E	2P2E	2P1E	2P2E	2P1E	2P2E	
Rated Voltage (A.C.) #1.	110	220	220***	220	110	220	220***	220	220***	220/380	
Rated Current Sensitivity (mA) #2.	30, (100, 200, 300, 500)*				30				30, (100, 200, 300, 500)*		
Max. Operating Time (s)	≤0.1S										
Rated Breaking Capacity (kA) CNS 5422 Icu AC	110V	5	—	10	—	5	—	10	—	15	—
	220V	—	5	5	10	—	5	5	10	10	15
Dimensions 	a	25	50	25	50	25	50	25	50	50	75
	b	110				92				95	
	c	60				60.5				58.5	
	ca	78.4				78.4				77.5	
	bb	120				—				100	
	aa	0	25	0	25	0	25	0	25	25	50
	(mm)										
Weight (kg)	0.22	0.39	0.22	0.39	0.2	0.34	0.2	0.34	0.4	0.58	
Trip Unit	Thermal Magnetic										
Earth Leakage Tripping Device	Mechanical										

Earth Leakage, Overload Protection				Earth Leakage Protection			
Frame (AF)	30		40		30		
Type	BL-KLF		BL-KF		BL-K30F		
Appearance							
Rated Current In(A) At Ambient Temp. 40°C	15, 20, 30		15, 20, 30, 40		15, 20, 30		
Phase & Wire	1φ2W		1φ2W		1φ3W 3φ3W		
Poles (P)	2P1E	2P2E	2		3		
Rated Voltage (A.C.)	110~220		110~220		110~220	380~440	
Rated Current Sensitivity (mA) #2.	30		30, (100, 200, 300, 500)*		30		
Max. Operating Time (s)	≤0.1S		≤0.1S		≤0.1S		
Rated Breaking Capacity (kA) CNS 5422 Icu AC  Dimensions	110V~220V	1.5	1.5, 2.5		1.5	—	
	380V~480V	—			—	1.5	
	a	66			90		
	b	70			70		
	c	42			42		
	ca	60			60		
	bb	59			59		
aa	33				57		
Weight (kg)	0.2				0.25		
Trip Unit	Thermal Magnetic				—		
Earth Leakage Tripping Device					Mechanical		

Note 1. **** 3 phase 4 wiring, L-N: 220V
2. ** Special order.

Optional Accessories Installation Table

■ AL: Alarm Switch / AX: Auxiliary Switch / SHT: Shunt Trip / UVT: Under Voltage Trip

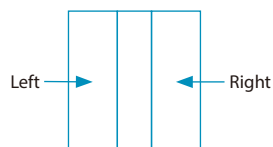
Model	Poles	AL	AX	SHT or UVT	AL+AX	AL+ SHT or UVT	AX+ SHT or UVT	AL+AX+ SHT or UVT
BM30-SN BM50-CN BM60-SN/HN BM63-SN/HN BM100-SN/MN	3P							—
BL50-SN	3P 4P			No UVT for 3P	—	—	—	—
BM60-HBN BM100-HN BM125-SN/HN	3P 4P			No UVT for 3P		No UVT for 3P	No UVT for 3P	—
BL100-SN BL100-HN	3P 4P			No UVT for 3P	—	No UVT for 3P	No UVT for 3P	—
BM100-HS BM160-HS BM250-HS	3P 4P			No UVT for 3P		No UVT for 3P	No UVT for 3P	—
BM100-BTD/STD/LTD BM125-LTD/HTA/RTA BM160-SN/HN/HTA/RTA BM250-SN/HN/HTA/RTA BMA125-STa/LTA/HTA BMA160-STa/LTA/HTA BMA250-STa/LTA/HTA	3P 4P							
BL160-SN BL250-SN/ CN	3P 4P				—	—	—	—
BM400-SN/HN/CN/RN/UN BMA400-LTA/HTA/RTA BM630s-STD/LTD/HTD/RTD BM630s-STa/LTA/HTA/RTA BMA630s-STD/LTD/HTD/RTD BMA630s-STa/LTA/HTA/RTA	3P 4P				No UVT for 3P			
BL400-SN/HN/RN/UN	3P 4P				No UVT for 3P			—
BM630-SN/HN/CN/RN/UN BM800-CN/SN/HN/RN BMA630-HTD/RTD/HTA/RTA/HED/RED BMA800-HTD/RTD/HTA/RTA/HED/RED	3P 4P				No UVT for 3P			No UVT for 3P
BL630-HN/RN/UN BL800-SN/HN/RN	3P 4P							
BM1000-HS BM1200-HS BM1600-HS	3P				—			—

2P, 125Af and below : Accessories are installed on the right side.

Note:

- Standard: AL and AX are installed on left side, SHT and UVT are installed on right side.
- SHT is equipped with coil anti-burn switch.
- BL series can not do right side installation.
- UVT of BM30-SN~BM100-HN can not install on its left side.
- #1 means have no UVT.
- #2 means only can apply to 4P breakers.

● : AL
○ : AX
■ : SHT or UVT

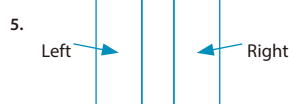


Accessories

Model	BMA100-HED/RED BMA160-HED/RED BMA250-HED/RED	BMA400-HED/RED	BMA630-HED/RED BMA800-HED/RED
Poles (P)	3P/4P		
AL			
AX			
SHT or UVT			
ZC			
AL+AX			
AL+SHT or UVT	AL+SHT(external) 		
AL+ZC	ZC(external) 		
AX+SHT or UVT			
AX+ZC	ZC(external) 		
SHT or UVT + ZC	—		
AL+AX+SHT or UVT			
AL+AX+ZC	*ZC(external) 		
AL+ZC+SHT or UVT	AL+ZC(external)+SHT(external) 		
AX+ZC+SHT or UVT	AX+ZC(external)+SHT(external) 		
AL+AX+ZC+SHT or UVT	—	—	

Note:

- ZC is an essential accessory for H type controller, including ZSI regional interlocking accessories and communication function accessories.
- If ZC or SHT are external, they can only be shipped after installation by the factory.
- AX position can be installed at AL.
- symbolic
 - : AL
 - : SHT or UVT
 - : AX
 - : ZC
 - ▲ : AX(internal), only be installed by manufacturer
 - △ : AL+AX



Optional Accessories | Application Table

Rotary Handle

TYPE	Poles	Model
EH-100N	3P~4P	BM30-SN, BM50-CN, BM60-SN/HN, BM63-SN/HN, BM100-SN/MN, BL50-SN
EH-100T	3P~4P	BM100-BTD/STD
EH-100L	3P~4P	BM100-LTD, BM125-LTD
EH-125T	2P~3P~4P	BM125-HTA/RTA
EH-125N	3P~4P	BM60-HBN, BM100-HN, BM125-SN/HN, BL100-SN/HN, BMA125-ST A/LTA/HTA
EH-250N	3P~4P	BM160-SN*/HN, BM250-CN*/SN/HN, BL160-SN, BL250-SN
EH-250T	3P~4P	BM160-HTA/RTA, BMA160-ST A/LTA/HTA, BM250-HTA/RTA, BMA250-ST A/LTA/HTA
EH-400N	3P~4P	BM400-CN*/SN/HN/RN/UN, BL400-SN/HN/RN/UN, BMA400-LTA/HTA/RTA BM630s-STD/LTD/HTD/RTD/STA/LTA/HTA/RTA, BMA630s-STD/LTD/HTD/RTD/STA/LTA/HTA/RTA
EH-800N	3P~4P	BM630-SN/HN/RN/UN, BM800-CN/SN/HN/RN, BL630-HN/RN/UN, BL800-SN/HN/RN, BMA630-HTD/RTD/HTA/RTA/HED/RED, BMA800-HTD/RTD/HTA/RTA/HED/RED
EH-250H	3P~4P	BM100-HS, BM160-HS, BM250-HS

Note:~indicates the value is can applied to 2P model.

Extended Rotary Handle

TYPE	Poles	Model
MA-100N	3P~4P	BM30-SN, BM50-CN, BM60-SN/HN, BM63-SN/HN, BM100-SN/MN, BL50-SN
MA-100T	3P~4P	BM100-BTD/STD
MA-100L	3P~4P	BM100-LTD, BM125-LTD
MA-125T	2P~3P~4P	BM125-HTA/RTA, BMA125-ST A/LTA
MA-125N	3P~4P	BM60-HBN, BM100-HN, BM125-SN/HN, BL100-SN/HN, BMA125-ST A/LTA/HTA
MA-250N	3P~4P	BM160-SN/HN, BM250-SN/HN, BMA125-ST A/LTA/HTA, BMA250-ST A/LTA/HTA, BL160-SN, BL250-SN
MA-250T	3P~4P	BM160-HTA/RTA, BMA160-ST A/LTA/HTA, BM250-HTA/RTA, BMA250-ST A/LTA/HTA
MA-400N	3P~4P	BM400-SN/HN/RN/UN, BL400-SN/HN/RN/UN, BMA400-LTA/HTA/RTA BM630s-STD/LTD/HTD/RTD/STA/LTA/HTA/RTA, BMA630s-STD/LTD/HTD/RTD/STA/LTA/HTA/RTA
MA-800N	3P~4P	BM630-SN/HN/RN/UN, BM800-CN/SN/HN/RN, BL630-HN/RN/UN, BL800-SN/HN/RN, BMA630-HTD/RTD/HTA/RTA/HED/RED, BMA800-HTD/RTD/HTA/RTA/HED/RED
MA-250H	3P~4P	BM100-HS, BM160-HS, BM250-HS

Terminal Cover

TYPE	Poles	Long cover	Short cover	Model
TC-30N	2	TC30CN2P	—	BM30-CN
	3	TC30CN3P	—	
TC-100N	2	TC100N2P-K	TCS100N2P-K	BM30-SN, BM50-CN,BM60/63-SN/HN, BM100-MN/SN BL50-SN, BM100-BTD/STD, BM100/125-LTD
	3	TC100N3P-K	TCS100N3P-K	
	4	TC100N4P-K	TCS100N4P-K	
TC-125N	2	TC125N2P-K	TCS125N2P-K	BM60-HBN BM100-HN, BM125-SN/HN, BL100-SN/HN
	3	TC125N3P-K	TCS125N3P-K	
	4	TC125N4P	TCS125N4P	
TC-125A	2~3	TC125A3P-K	TCS125A3P-K	BM125-HTA/RTA, BMA125-ST A/LTA/HTA
	4	TC125A4P-K	TCS125A4P-K	
TC-250N	3	TC250N3P-K	—	BM160-SN/HN, BM250-CN/SN/HN, BM160/250-HTA/RTA BMA160/250-ST A/LTA/HTA, BL160-SN, BL250-SN
	4	TC250N4P-K	—	
TC-250H	3	TC250H3P	—	BM100-HS, BM160/250-HS
	3	TC400N3P	—	
TC-400N	4	TC400N4P	—	BM400-CN/SN/HN/RN/UN, BM630s-STD/LTD/HTD/RTD BM630s-ST A/LTA/HTA/RTA, BMA400-LTA/HTA/RTA BMA400-HTD/RTD/HMF/RMF, BMA630s-STD/LTD/HTD/RTD BMA630s-ST A/LTA/HTA/RTA, BL400-SN/HN/RN/UN
	3	TC630N3P	—	
TC-630N	4	TC630N4P	—	BM630-CN/SN/HN/UN/RN, BM800-CN/SN/HN/RN BM630-HE/RE/UE, BM800-SE/HE/RE BMA630-HTD/RTD/HTA/RTA, BMA800-HTD/RTD/HTA/RTA BMA630-HED/RED, BMA800-HED/RED, BL630-HN/RN/UN, BL800-SN/HN/RN

Motor Operation Device

TYPE	Poles	Model
MT-100N	3P~4P	BM30-SN, BM50-CN, BM60-SN/HN, BM63-SN/HN, BM100-SN/MN, BL50-SN
MT-125N	3P~4P	BM60-HBN, BM100-HN, BM125-SN/HN, BL100-SN/HN, BMA125-ST A/LTA/RTA
MT-250N	3P~4P	BM160-SN/HN, BM250-SN/HN, BL160-SN, BL250-SN, BMA160-ST A/LTA/HTA, BMA250-ST A/LTA/HTA
MT-400N	3P~4P	BM400-SN/HN/RN/UN, BL400-SN/HN/RN/UN, BMA400-LTA/HTA/RTA BM630s-STD/LTD/HTD/RTD/STA/LTA/HTA/RTA BMA630s-STD/LTD/HTD/RTD/STA/LTA/HTA/RTA
MT-800N	3P~4P	BM630-SN/HN/RN/UN, BM800-CN/SN/HN/RN, BL630-HN/RN/UN, BL800-SN/HN/RN, BMA630-HTD/RTD/HTA/RTA/HED/RED, BMA800-HTD/RTD/HTA/RTA/HED/RED
MT-250E	3P~4P	BM100-HS, BM160-HS, BM250-HS

Note:~Applicable voltage : ① DC 24V ② AC 110V/ DC 110V ③ AC 230V/ DC 220V

Rear Connection

TYPE	Poles	Model
PGI-100N50	3P	BM30-SN, BM50-CN, BM60-SN/HN, BM63-SN/HN, BL50-SN (50A and below), BM50-CN
PGI-100N	3P	BM60-SN/HN, BM100-SN/MN (60A and below)
PGI-125N50	3P	BM60-HBN, BM100-HN, BM125-SN/HN, BL100-SN/HN (50A and below)
	4P	BM100-HN, BM125-SN, BL100-SN/HN (50A and below)
PGI-125M	2P~3P~4P	BM125-HTA/RTA
PGI-125N	3P	BM60-HBN, BM100-HN, BM125-SN, BL100-SN/HN (60A and above)
	4P	BM100-HN, BM125-SN, BL100-SN/HN (60A and above)
PGI-250N	3P~4P	BM160-SN/HN, BM160-HTA/RTA, BM250-SN/HN, BM250-HTA/RTA, BL160-SN, BL250-SN
PGI-400N	3P~4P	BM400-SN/HN/RN/UN, BL400-SN/HN/RN/UN, BM630s-STD/LTD/HTD/RTD/STA/LTA/HTA/RTA, BMA630s-STD/LTD/HTD/RTD/STA/LTA/HTA/RTA
PGI-800N	3P~4P	BM630-SN/HN/RN/UN, BM800-CN/SN/HN/RN, BL630-HN/RN/UN, BL800-SN/HN/RN
PGI-BM250	3P	BM100-HS, BM160-HS, BM250-HS

Locking Device

TYPE	Poles	Model
FHL-250M	2P~3P~4P	BM125-HTA/RTA, BMA125-ST A/ LTA/ HTA
	3P~4P	BM160/250- HN / HTA / RTA / SN , BM250 CN, BMA160/250-ST A/LTA/HTA, *BL160/250-SN
FHL-400M	3P~4P	BM400-CN/SN/HN/RN/UN, BM400-HE/RE/UE, BMA400-LTA/HTA/RTA, BMA630s-STD/STA/LTD/LTA/HTD/HTA/RTD/RTA, BM630s-STD/STA/LTD/LTA/HTD/HTA/RTD/RTA
FHL-800M	3P~4P	BM630-SN/HN/RN/UN, BM800-CN/SN/HN/RN, BM630-HE/RE/UE, BM800-SE/HE/RE, BMA630-HED/RED, BMA800-HED/RED, BMA630/800- HTD/RTD

Optional Accessories | Dimensions

Rotary Handle

Type	Poles	fig.1				fig.2			fig.3		
		A	B	C	D	E	F	G	H	J	K
EH-100N	3P, 4P	104	105	39	44	90	78	10	25	111	M4 or ø5
EH-100T	3P, 4P	104	105	39	44	90	78	10	25	111	
EH-100L	3P, 4P	104	105	39	44	90	78	10	35	126	
EH-125N	3P, 4P	104	105	39	44	90	78	10	30	132	
EH-250N	3P, 4P	104	105	39	44	90	78	10	35	126	
EH-250H	3P, 4P	104	125	39	44	90	78	10	35	126.5	
EH-400N	3P, 4P	150	173	60	77	108	112	10	44	194	
EH-800N	3P, 4P	150	173	60	77	108	112	10	70	243	

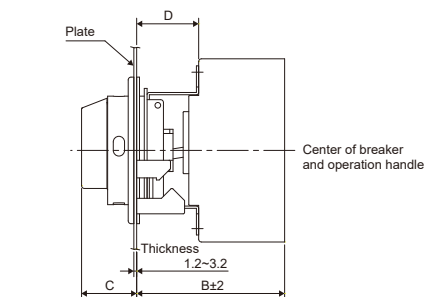
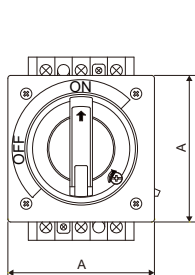
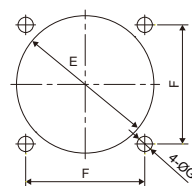
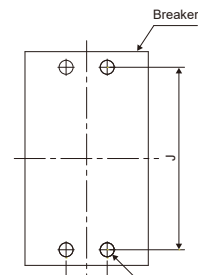


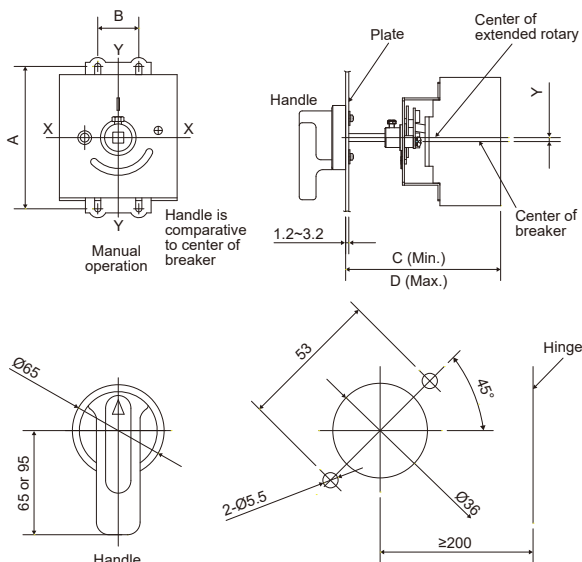
Fig. 1

Panel Dimension
Fig. 2Breaker Dimension
Fig. 3

Note: 1. Optional for dust and water protection.

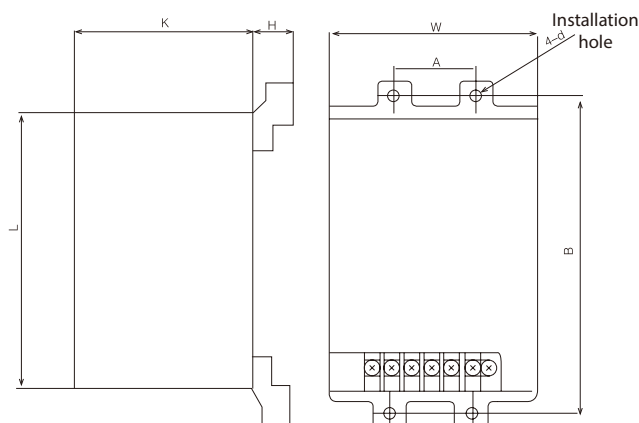
Extended Rotary Handle

Type	Dimensions (mm)					Screw
	A	B	C	D	Y	
MA-100N	111	25	125	229	+8	M4x80
MA-100T	111	25	125	229	0	M4x75
MA-100L	111	25	125	229	0	M4x75
MA-125N	114	30	125	229	+8	M4x80
MA-250N	126	35	125	229	0	ST3x10
MA-250H	126	35	143	247	0	M4x50
MA-400N	221	44	190	290	+10	M5x50
MA-800N	242	70	190	290	+10	M6x125 & M6x12



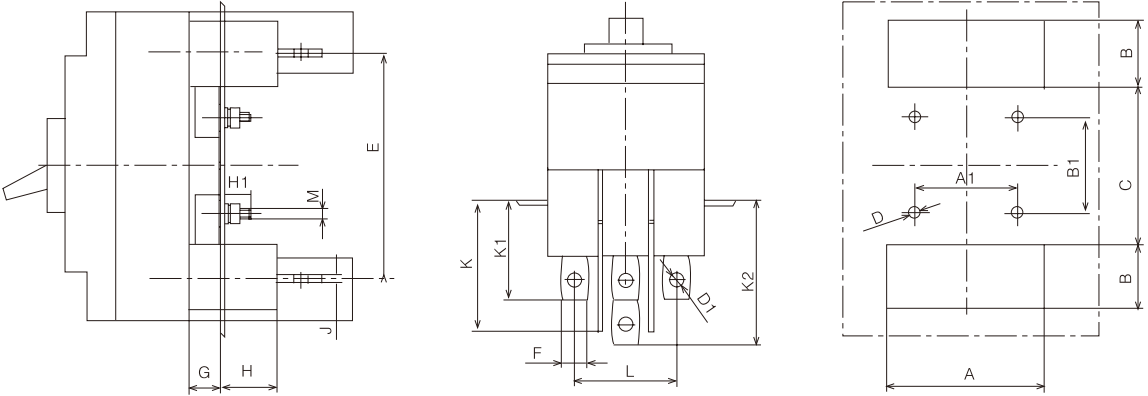
Motor Operation Device

Type	Dimensions (mm)						
	A	B	d	H	K	L	W
MT-100N	25	111	ø4.5	16.5	79	102	74
MT-125N	30	132	ø4.5	15	77	116	90
MT-250N	30	126	ø4.5	15	77	116	90
MT-400N	44	194	ø4.5	36	115	176	130
MT-800N	70	234	ø4.5	36	115	176	130
MT-250E	30	126	ø4.5	15	77	116	90



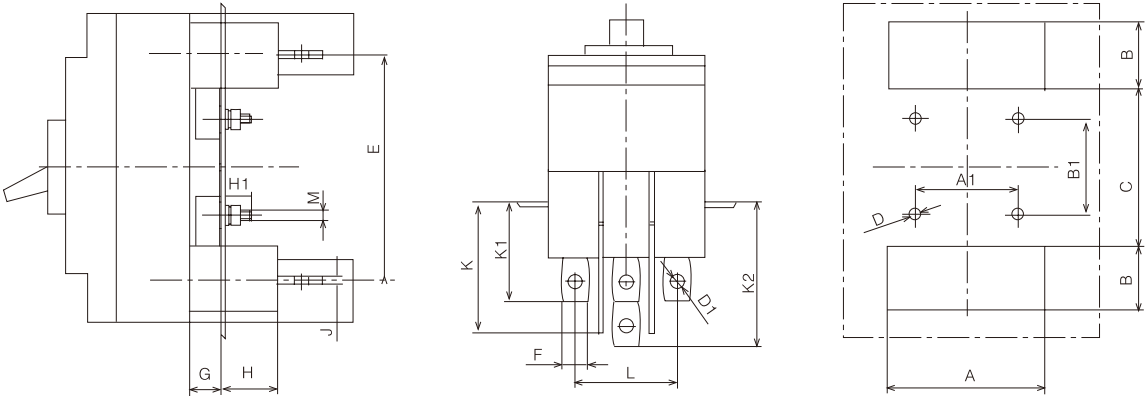
Rear Connection

Type	Poles	Dimensions (mm)																	Connect Direction		
		A	A1	B	B1	C	D	D1	E	F	G	H	H1	J	K	K1	K2	L	M	Horizontal	Vertical
PGI-100N	3	74	50	24	58	90	ø5	/	116	M10	9.5	28	12	M10	/	62	122	50	M4	⊙	⊙
	4	99	75															75			
PGI-125N	3	92	60	30	70	104	ø6	/	134	M10	13	26	16	M10	/	62	122	60	M5	⊙	⊙
	4	122	90															90			
PGI-250N	3	107	70	38	76	106	ø6	ø10	144	25	13	34	15	6	/	79	134	70	M5	⊙	⊙
	4	142	105															105			
PGI-400N	3	137	44	50	135	175	ø10	ø13	225	28	18	40	24	8	120	79	/	44	M8	⊙	⊙
	4	181	88															88			
PGI-800N	3	212	140	57	143	185	ø10	ø13	243	44	17	53	20	11	/	146	/	140	M8	⊙	⊙
	4	282	210															210			



Rear Connection

Type	Poles	Dimensions (mm)																	Connect Direction		
		A	A1	B	B1	C	D	D1	E	F	G	H	H1	J	K	K1	K2	L	M	Horizontal	Vertical
PGI-BM250	3	107	70	38	76	106	ø6	ø10	144	25	13	34	15	6	/	79	134	70	M5	⊙	⊙





ATS (Automatic Transfer Switches)

A. PC Class

Frame size		63			125			250			500		
Insulation Voltage, Ui		AC800V											
Rated Impulse Withstand Voltage, Uimp		12kV											
Rated Voltage, Ue		2P: AC220 / 230 / 240V 3/4P: AC380 / 400 / 415V											
Control Voltage , Us		AC220 / 230 / 240V, 50/60Hz											
Rated Current, In (A)		16, 20 , 25, 32, 40, 50, 63			80, 100, 125			160, 200, 225, 250			350, 400, 500		
Pole		2	3	4	2	3	4	2	3	4	2	3	4
Operation current (A)	AC220/230 /240V	3	3	4	3	3	4	5	5	5	5	5	6
Tripping current (A)	AC220/230 /240V	1									1.4		
Rated condition short circuit current (fuse)		100kA			100kA			120kA			120kA		
Rated condition short circuit current (breaker)		50kA			50kA			65kA			65kA		
Making and Breaking Capacity		AC-33B, DC-33B											
Switching time	I -> II	≤1s											
	II -> I												
Endurance		Electrical: 6000 Mechanical: 20000											
Switching frequency		120 times / hr											
Auxiliary switch		2NO2NC on both source AC110V, 5A AC220V, 3A DC220V, 0.2A											

Note : AC-33A: Making & Breaking: 10Ie, cosφ=0.35
AC-33B: Making & Breaking: 10Ie, cosφ=0.35 (Ie≤100A, cosφ=0.45)
DC-33B: Making & Breaking: 4Ie, L/R=2.5ms



ATS Controller Specification

• XST-5

Type	Standard
Poles	2 / 3 / 4
Rated operation voltage (V)	AC380 / 220 AC400 / 230 AC415 / 240
Rated operation frequency (Hz)	50 / 60
Operation voltage (V)	165~300 (Phase voltage)
Operation temperature (°C)	-25 ~ 60
Optional functions	—



ATS (Automatic Transfer Switches)

A. PC Class

Frame size		800		1250		2500		5000	
Insulation Voltage, Ui		AC800V							
Rated Impulse Withstand Voltage, Uimp		12kV							
Rated Voltage, Ue		AC400V							
Control Voltage , Us		AC220V, 50Hz							
Rated Current, In (A)		630, 800		1000, 1250		1600, 2000, 2500		3200, 4000, 5000	
Pole		3	4	3	4	3	4	3	4
Operation current (A)	AC220/230 /240V	6	6	6	8	8	9	18	20
Tripping current (A)	AC220/230 /240V	2							
Rated condition short circuit current (fuse)		120kA		120kA		—		200kA	
Rated condition short circuit current (breaker)		50kA		50kA		50kA		—	
Making and Breaking Capacity		AC-33B, DC-33B						AC-33A, DC-33B	
Switching time	I -> II	≤1s							
	II -> I								
Endurance		Electrical: 6000 Mechanical: 10000							
Switching frequency		120 times / hr							
Auxiliary switch		2NO2NC on both source AC110V, 5A AC220V, 3A DC220V, 0.2A							



ATS Controller Specification

• XST-6

Type	Multifunction
Poles	2 / 3 / 4
Rated operation voltage (V)	AC380 / 220 AC400 / 230 AC415 / 240
Rated operation frequency (Hz)	50 / 60
Operation voltage (V)	165~300 (Phase voltage)
Operation temperature (°C)	-25 ~ 60
Optional functions	Current measurement + communication

ATS (Automatic Transfer Switches)



(Controller voltage: AC 220V)

A. MCCB Type

Type	Pole	Rated current In (A)	Rated Breaking Capacity Sym r.m.s. (kA) IEC 60947-2 AC Icu	
			220V	380V
BS100SN	3P, 4P	10, 15, 20, 30, 40, 50, 60, 75, 100.	25	15
BS100HN	3P, 4P		50	30
BS250SN	3P, 4P	125, 150, 175, 200, 225, 250.	50	30
BS400SN	3P, 4P		50	35
BS400HN	3P, 4P	250, 300, 350, 400.	85	50
BS630SN	3P, 4P		50	35
BS630HN	3P, 4P	500, 600, 630.	85	50
BS800SN	3P, 4P		85	50
BS1000HS	3P	1000	130	100
BS1200HS	3P	1200	130	100
BS1600HS	3P	1400, 1600.	130	100

Note : 1. Standard: IEC 60947-2
2. Special breaking capacity, please contact sales representative.
3. BS225SN rated current 250A is optional order.

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MCCB
ELCB

ATS

ACB

MCB

SPD

MS

MMS



B. MS Type

Type	ATS Protection Switch	Rated current In (A)	Pole	Voltage
BS-MB	Miniature Circuit Breaker Protection Switch	20A	R, N	110V
			R, T	220V



Specifications

Frame Size			1600AF	2000AF		2500AF
Model			BW-1600 SN	BW-2000 HS	BW-2000 HN	BWA-2500
Rated current In (A)			400, 630, 800, 1000, 1250, 1600	630, 800, 1000, 1250, 1600, 2000		400, 630, 800, 1000, 1250, 1600, 2000, 2500
Pole			3, 4	3, 4		3, 4
Frequency (Hz)			50, 60	50, 60		50, 60
Rated voltage Ue (V)			AC 690	AC 690		AC 400, 415, 690
Rated impulse withstand voltage, Uimp (kV)			12	12		12
Insulation voltage Ui			AC1000	AC1000		AC1000
Rated current of Neutral (%)			100%In	100%In		100%In
Breaking capacity	Icu / Ics (kA)	690V	50 / 50	50 / 50	55 / 55	65 / 65
		380/400/415V	65 / 65	80 / 50	85 / 85	85 / 85
		240V	—	80 / 50	85 / 85	—
	Icw (kA) 1sec	400/415V	50	50	65	85
		690V	50	50	55	65
Operating time (ms)		Max. total breaking time	≤ 30	40		40
		Max. closing time	≤ 70	80		80
Endurance	Mechanical	0	20000	20000		30000
		Without maintenance	15000	10000		15000
	Electrical	With maintenance	8000	15000		8000
		Without maintenance	5000	8000		6000
Dimensions H x W x D (mm)	Fixed Type	3P	312 x 265 x 201	402 x 362 x 332		397 x 365 x 364
		4P	312 x 335 x 201	402 x 455 x 332		397 x 460 x 364
	Drawout Type	3P	345 x 275 x 300	430 x 375 x 421		400~2000: 435 x 405 x 448.5 2500: 435 x 405 x 473
		4P	345 x 345 x 300	430 x 470 x 421		400~2000: 435 x 500 x 448.5 2500: 435 x 500 x 473

Note: Icu/Ics/Icw for HS type only labeled 400V and 690V on the name plate, other voltage are for reference.



3200AF		4000AF		6300AF	
BW-3200 HS	BW-3200 HN	BW-4000 HS	BW-4000 HN	BW-6300 HS	BW-6300 HN
2000, 2500, 3200		4000		5000, 6300	4000, 5000, 6300
3, 4		3, 4		3, 4	
50, 60		50, 60		50, 60	
AC 690		AC 690		AC 690	AC 380, 400, 415, 690
12		12		12	
AC1000		AC1000		AC1000	
100%In		100%In		100%In	
65 / 50	65 / 65	65 / 50	65 / 65	85 / 85	85
100 / 65	100 / 100	100 / 65	100 / 100	120 / 100	120
100 / 65	100 / 100	100 / 65	100 / 100	120 / 100	—
65	85	65	85	100	100
65	65	65	75	85	
40		40		40	
80		80		80	
20000		20000		10000	13000
10000		10000		2500	6500
13000		12000		2000	4000
6500		6000		500	4000
402 x 422 x 332		402 x 422 x 377		—	402 x 800 x 377
402 x 537 x 332		402 x 537 x 377		—	402 x 915 x 377
430 x 435 x 421		430 x 465 x 466		5000: 435 x 842 x 505 6300: 435 x 960 x 505	4000~5000: 435 x 842 x 495 6300: 435 x 958 x 495
430 x 550 x 421		430 x 580 x 466		435 x 956 x 492	435 x 958 x 495

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MCCB
ELCB

ATS

ACB

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MMS

MCB (Miniature Circuit Breaker) | RP Series

Applications:

Applicable to power distribution, provide circuit to against overload, short circuit and earth leakage.

- Windows display
- Din-rail TH35mm

RPC

· Overload, Short Circuit

RPC	2	C	32			
↓	↓	↓	↓			
Type	Poles (P)	Tripping characteristics	Rated current In(A)	Rated short-circuit breaking capacity(kA)	Standard	Mechanical life (times)
				Rated voltage (V)		
RPC	1, 2, 3, 4	B,C,D Type or 8~12In	1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63	6kA @240/415Vac	"IEC 60898-1, IEC 60947-2	20000
RPC-H	1, 2, 3, 4	B,C,D Type or 8~12In	1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63	10kA @240/415Vac	"IEC 60898-1, IEC 60947-2	20000



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MCCB
ELCB

ATS

ACB

MCB

SPD

MS

MMS

RPV

· Residual Current

RPV	1P+N	32	C	A	15
↓	↓	↓	↓	↓	↓
Type	Poles (P)	Rated current In(A)	Rated conditional short-circuit current (Inc)	Residual current type	Rated residual current
RPV	1P+N 3P+N	16, 20, 25, 32, 40, 63	6kA = C 10kA = H	A Type = A AC Type = C	10, 15, 30, 100, 300

· Note: Rated residual current 10 is below 40A



RPL

· Overload, Short Current, Leakage

RPL	1P+N	40	C	C	C	100
↓	↓	↓	↓	↓	↓	↓
Type	Poles (P)	Rated current In(A)	Tripping characteristics	Rated short-circuit breaking capacity(kA)	Residual current type	Rated residual current (mA)
RPL	1P+N	6, 10, 16, 20, 25, 32, 40, 50, 63	C Type = C D Type = D	6kA = C @240Vac	A Type = A AC Type = C	10, 15, 30, 100, 300



Item	Model	Operating Characteristic	Width (mm)	Wiring Diagram
Auxiliary Switch (AX)	RX	AC415V 3A DC125V 1A	9	
Alarm Switch (AL)	RL	AC415V 3A DC125V 1A	9	
Shunt Trip (SHT)	RSX1	AC110~220 3A	18	
	RSX2	AC220~415 3A		
	RSX3	DC12~24 3A		
	RSX4	DC24~48 3A		
Under Voltage Trip (UVT)	RU	AC230V $U < 170V \pm 5\%$	18	
Over Voltage Trip (OVT)	RO	AC230V $U > 280V \pm 5\%$	18	
Over-under Voltage Trip (OUVT)	ROU	AC230V $U < AC170V \pm 5\%$ $U > AC280V \pm 5\%$	18	

Note: 1. Those accessories are suitable only for RPC 63AF product.
2. All accessories are installed on the left.
3. AX and AL can be installed up to 4 units at once.

MCB (Miniature Circuit Breaker) | BHA-B Series (New)

Applications:

Applicable to the residential, industrial and commercial power distribution systems, provide circuit-control and protection on equipments against any impacts of overload, short-circuit and earth leakage.

- DIN rail TH 35mm
- Ambient temperature: -5°C~ +40°C



BHA

• Overload, Short circuit

BHA-B	3	2	C	50		
Type	Rated short-circuit breaking capacity (kA)	Poles (P)	Tripping characteristics	Rated current In (A)	Standard	Mechanical life
	Rated voltage (V)					
BHA-B	3S: 6kA (@ AC230/240V: 1P+N)	1P+ N (Phase N can be close & open)	C type: 5~10In	6, 10, 16, 20, 25, 32	IEC 60898	20,000 operations
	3 : 6kA 4 : 10kA (@ AC230/400V: 1P, AC240/415V: 1P, AC400/415V: 2P, 3P, 4P)	1, 2, 3, 4	B type: 3~5In C type: 5~10In D type: 10~15In	1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63	IEC 60898 IEC 60947-2	20,000 operations
BHA	12S: 10kA (@ AC230/240V: 1P, AC400/415V: 2P, 3P, 4P)	1, 2, 3, 4	8~12In	80, 100, 125	IEC 60947-2	10,000 operations
BHA	4: 10kA (@ DC125V: 1P / DC250V: 2P) 5: 10kA (@ DC250V: 1P, DC500V: 2P, DC750V: 3P, DC1000V: 4P)	1, 2, 3, 4	10In	1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63	IEC 60947-2	20,000 operations

- BHA5 can not be used in IT system
- Ue(AC): AC230/240V(1P+N), AC230/240V(1P), AC240/415V(1P), AC400/415V(2P/3P/4P)
- Ui: AC500V(1P+N), AC690V(1~4P)
- Certification: CCC, CE, CB, TUV
- Ue(DC): DC125V/250V(1P), DC250V/500V(2P), DC750V(3P), DC1000V(4P)



BHL

• Overload, Short circuit, Earth Leakage

BHL-A	2	1	C	40	A	30	
Type	Rated short-circuit breaking capacity (kA)	Poles (P)	Tripping characteristics	Rated current In (A)	Residual current type	Rated sensitivity current (mA)	Optional function (2P)
	Rated voltage (V)						
BHL-A	2: 4.5kA 3: 6kA (@ AC 230V)	1: 1P+N *Width: 36mm	C Type: 5~10In D type: 10~15In	6, 10, 16, 20, 25, 32, 40, 50, 63	A, AC	10, 30, 100, 300	Over-voltage protection (230V, internal built)
BHL-B	3: 6kA (@AC230/240V: 2P, AC400/415V: 3P, 4P)	2: 2P 3: 3P 4: 4P	C Type: 5~10In D type: 10~15In	1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63	A, AC	30, 050, 100, 300	Blank: No protection G: Over-voltage protection internal built
BHL-B	4: 10kA (@AC230/240V: 2P, AC400/415V: 3P, 4P)				A, AC	30, 050, 100, 300, 500	
BHL-B	3L: 6kA 4L: 10kA (@ AC 230/240V)	1: 1P+N *Width: 18mm * N phase with wire	C Type: 5~10In D type: 10~15In	6, 10, 16, 20, 25, 32, 40	A, AC	10, 30, 100	—
BHL-B	3S: 6kA (@ AC 230V)	1: 1P+ N *Width: 18mm	C Type: 5~10In	6, 10, 16, 20, 25, 32	A, AC	10, 30	—
BHL-B	3N: 6kA 4N: 10kA (@ AC 230/240V)	1: 1P+N *Width: 36mm	C Type: 5~10In D type: 10~15In	6, 10, 16, 20, 25, 32, 40, 50, 63	A, AC	10, 30, 50, 100	Blank: No protection G: Over-voltage protection internal built

- IEC 61009
- Internal OVT over voltage range AC280V ± 5%
- 1P+N (Phase N can be close and open)



BL-BF

· Overload, Short Current, Leakage

BL-BF	V	15	015	20
↓	↓	↓	↓	↓
Model	Type	Rated current In (A)	Rated sensitivity current IΔn (mA)	Pole
BL-BF	V: RCCB L: RCBO C: MCB	15, 20, 30	000: N/A (C Type) 015: 15 (V/L Type) 030: 30 (V/L Type)	20: 2P0E (V type) 21: 2P1E (C type) 22: 2P2E (L type)



BHR-A

· Residual Current

BHR-A	4	4	25	A	030
↓	↓	↓	↓	↓	↓
Type	Breaking capacity (kA)	Poles (P)	Rated current In (A)	Residual current Type	Rated sensitivity current IΔn (mA)
BHR-A	4: 10kA	2: 2P 4: 4P	25, 32, 40, 63	A, AC	30, 100, 300 (In:25A-63A) 10 (In:25A-40A)
BHR-B	4: 10kA	2: 2P 4: 4P	16, 20, 25, 40, 50, 63, 80, 100	B	Blank: 50Hz 6: 60Hz



BHG

· Disconnect Switch

BHG		2	32		
↓		↓	↓		
Type	Rated voltage (V)	Poles (P)	Rated current In (A)	Standard	Mechanical life
BHG	230/400V	1, 2, 3, 4	32A, 40A, 63A, 80A, 100A.	IEC 60947-3	50,000 operations

BHN

· N+L Overload, Short Circuit

BHN	2	1	C	32
↓	↓	↓	↓	↓
Type	Rated breaking capacity (kA)	Poles (P)	Tripping characteristics	Rated current In (A)
	Rated voltage (V)			
BHN	2: 4.5kA; 3: 6kA 230V	1P+N	C type: 5~ 10In	6, 10, 16, 20, 25, 32.

· Standard: IEC 60898



BHZ

· Over / Under Voltage Protective Device with Auto-reset

BHZ2	25								
↓	↓								
Type	Rated current In (A)	Over voltage		Under voltage		Operation time		Reset	
		Operating value	Reset value	Operating value	Reset value	Over voltage	Under voltage		
BHZ2	25, 32, 40, 50, 63	> 275V	255V-265V 260	50V~160V	180V~190V 185	275V: 3-15s 300V: 1-3s 350V: 0.25-0.75s 400V: 0.1-0.2s	0.7s	30s±5s	

· Standard: IEC 60898



BHK

Accessories

BHK	2						1	0						
Type	Accessory Code						Installation		Control Voltage					
	1	2	3	4	5	6	1	2	0	1	2	3	4	5
	AL	AX	SHT	UVT	OVT	OUVT	Standard	Option	—	AC220~240V	DC48V	AC24~48V DC12~48V	AC12V	AC230~415V DC110~130V
BHK	AL						○		○					
		AX					○	○	○					
			SHT				○	○				○	○	○
				UVT			○	○		○	○			
					OVT		○	○	○					
						OUVT	○	○	○					

Note: 1. Standard: Attached on left side of breaker
2. Option: Attached on left side of accessory

Model	Type	Wiring	Contact capacity	Control voltage
BHK-B10	AL		1NO 1NC AC 415V 3A AC 240V 6A DC 130V 1A DC 48V 2A DC 24V 6A	—
BHK-B20	AX		1NO 1NC AC 415V 3A AC 240V 6A DC 130V 1A DC 48V 2A DC 24V 6A	—
BHK-B30	SHT		—	AC/DC 24~48V AC 110~415V DC 110~130V
BHK-B32	SHT+AX		1NO 1NC AC 415V 3A AC 240V 6A DC 130V 1A DC 48V 2A DC 24V 6A	AC/DC 24~48V AC 110~415V DC 110~130V
Model	Type	Wiring	Over / Undervoltage tripping value	
BHK-B40	UVT		<170V ± 5%	
BHK-B40S	UVT		<160V ± 5% * Tripping time <0.2S	
BHK-B50	OVT		>275V ± 5%	
BHK-B45	OVT		>275V ± 5% <170V ± 5%	

Note:

- If AL/AX/SHT/UVT are selected together, AL/AX can only be installed on the left side of SHT/UVT.
- The BHK-B40 and BHK-B45 do not have under-voltage protection. When the voltage has not yet returned to normal and the control voltage is less than 35% of Un, the circuit breaker can still close.
- The BHK-B40S has under-voltage protection. When the voltage has not yet returned to normal and the control voltage is less than 35% of Un, the circuit breaker cannot be closed.
- The BHA-B35 and BHL-B35 do not have optional accessories.

Surge Protective Device | BHP Series



BHP			3P			R			320		
↓			↓			↓			↓		
Type	Imax/Limp (kA)	Waveform (μs)	Pole (P)	Alarm auxiliary contact R: with Blank: without	Uc (V)	Un (V)	Up (kV)	Waveform (μs)	In (kA)	Connection wire diameter	
										L-N	PE
BHP20	20: 20kA	8/20	1P: 1P 1P1: 1P+1 2P: 2P 3P: 3P 3P1: 3P+1 4P: 4P	R	275	230/400	1.1	8/20	10	≥ 2.5mm ²	≥ 6mm ²
					320		1.2				
BHP40	40: 40kA	8/20		R	275	230/400	1.3	8/20	20	≥ 4mm ²	≥ 16mm ²
					385		1.8				
BHP80	80: 80kA	8/20		R	275	230/400	1.8	8/20	40	≥ 10mm ²	≥ 25mm ²
					385		2.1				
BHP100	100: 100kA	8/20		R	275	230/400	2.1	8/20	60	≥ 16mm ²	≥ 25mm ²
					385		2.3				
BHP250	250: 25kA	10/350			275	230/400	2.3	10/350	—	≥ 25mm ²	≥ 35mm ²
					440		2.3				

To enable the surge protective device to work, please read the following note:

1. The grounding system type of the protected device and maximum operating voltage of the power grid U_s . Max.
2. The impulse withstand voltage of the protected device.

Note: 1. BHP20, 40 are plug-in type; BHP80, 100, 250 are fixed type.
2. The standard operation voltage $U_c(V)$ is below table. Max operation voltage $U_c(V)$: 660V.

SPD Counter

Model	TAD-04-99
Rated Voltage	AC85~250V
Max. Count	99
Display	LED
Dimension (mm)	91X69X18

Normal working conditions

- Frequency: the AC power frequency shall be 50/60Hz.
- Voltage: the voltage continuously supplied between the wiring terminals of the surge protective device shall not exceed its maximum continuous operating voltage U_c .
- Altitude: less than 2,000m.
- Use and storage temperature: -Normal range: $-5^{\circ}\text{C} \sim +40^{\circ}\text{C}$;
-Ultimate range: $-40^{\circ}\text{C} \sim +80^{\circ}\text{C}$;
- Humidity: Relative humidity 30%~90% under ambient temperature.

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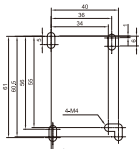
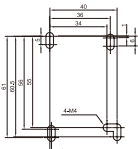
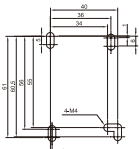
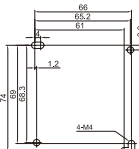
SPD

MS

MMS

Magnetic Contactor / Motor Starter ◆ AC control



Model				16	21 (A)	25	30T	
Type	Magnetic Contactor	Nonreversing		S-P16	S-P21 (A)	S-P25	S-P30T	
		Reversing		S-2 x P16	S-2 x P21 (A)	S-2 x P25	S-2 x P30T	
	Motor Starter	without enclosure	Nonreversing	MSO-P16	MSO-P21	MSO-P25	MSO-P30T	
			Reversing	MSO-2 x P16	MSO-2 x P21 (A)	MSO-2 x P25	MSO-2 x P30T	
		with enclosure	Nonreversing	MS-P16	MS-P21 (A)	MS-P25	MS-P30T	
			Reversing	MS-2 x P16	MS-2 x P21 (A)	MS-2 x P25	MS-2 x P30T	
		with enclosure (push button)	Nonreversing	MS-P16PB	MS-P21PB (A)	MS-P25PB	MS-P30TPB	
	TOR		Standard	TH-P20ES	TH-P20ES	TH-P20ES(TA)	TH-P20ES(TA)	
			Differential	TH-P20ES PP	TH-P20ES PP	TH-P20ES(TA)PP	TH-P20ES(TA)PP	
	Rated Capacity	IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660 AC 3 (kW/HP/A)	3 ∅	240V	4.5/6/18	5.5/7.5/24	6.5/8.5/26	7.5/10/30
380/415V				7.5/10/18	11/15/21	12/16/23	15/20/28	
440V				7.5/10/18	11/15/21	12/16/23	15/20/27	
550V				7.5/10/13	11/15/17	12/16/20	15/20/22	
660V				7.5/10/10	11/15/14	12/16/16	15/20/18	
Operation current (Ith) AC1 (A)			30	30	32	50		
Rated insulation voltage (V)			AC660	AC660	AC660	AC660		
UL 508 CSA-C22.2 AC3 (HP/A)			1 ∅	100~120V	1/16	2/24	2/24	-
		200~240V		3/17	3/17	3/17	-	
		3 ∅	200~240V	5/15.2	7.5/22	10/28	-	
			380~480V	10/14	15/21	15/21	-	
			550~600V	10/11	15/17	15/17	-	
		Operation current (Ith) AC1 (A)		30	35	40	50	
		Rated insulation voltage (V)		AC600	AC600	AC600	AC600	
		NEMA			0	1	1	1
Auxiliary Contact		Auxiliary Contact		Standard	1NO 1NC	1NO 1NC (2NO 2NC)	1NO 1NC	1NO 1NC
				Special	-	-	-	-
		IEC 60947-5-1 EN 60947-5-1	220V		1.6	1.6	1.6	1.6
	380V		0.95	0.95	0.95	0.95		
	Operation current (Ith) AC1(A)		16	16	16	16		
	Contact class (UL)		A600,P600,Q300	A600,Q300	A600,Q300	A600,Q300		
Performance	Electrical life (AC3) (10 thousand)		130	130	130	130		
	Mechanical life (10 thousand)		1000	1000	1000	1000		
	Operation (Time/Hour)		1200	1200	1200	1200		
Magnetic Contactor	Weight (kg)		0.37	0.38	0.38	0.38		
	Appearance Dimensions (W×H×D) (mm)		53.5x81x83.5	53.5x81x83.5	53.5x81x83.5	53.5x81x83.5		
	Installation Dimension (mm)							
Mechanical Interlock			MPU-21	MPU-21	MPU-21	MPU-11		

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35T

38T

40T

50T

60T

S-P32T

S-P35T

S-P38T

S-P40T

S-P50T

S-P60T

S-2 x P32T

S-2 x P35T

S-2 x P38T

S-2 x P40T

S-2 x P50T

S-2 x P60T

MSO-P32T

MSO-P35T

MSO-P38T

MSO-P40T

MSO-P50T

MSO-P60T

MSO-2 x P32T

MSO-2 x P35T

MSO-2 x P38T

MSO-2 x P40T

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MSO-2 x P60T

MS-P32T

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MS-P38T

MS-P40T

MS-P50T

MS-P60T

MS-2 x P32T

MS-2 x P35T

MS-2 x P38T

MS-2 x P40T

MS-2 x P50T

MS-2 x P60T

MS-P32TPB

MS-P35TPB

MS-P38TPB

MS-P40TPB

MS-P50TPB

MS-P60TPB

TH-P20ES(TA)

TH-P20ES(TA)

TH-P20ES(TA)

TH-P20ES(TA)

TH-P60ES

TH-P60ES(TA)

TH-P20ES(TA)PP

TH-P20ES(TA)PP

TH-P20ES(TA)PP

TH-P20ES(TA)PP

TH-P60ES PP

TH-P60ES(TA)PP

7.5/10/32

9/12.5/35

9/12.5/38

11/15/44

15/20/58

19/25/65

15/20/32

15/20/30

18.5/25/38

22/30/40

30/40/52

37/50/65

15/20/27

15/20/27

18.5/25/38

22/30/40

30/40/52

37/50/65

18.5/25/29

15/20/22

18.5/25/30

22/30/32

30/40/41

37/50/52

18.5/25/22

15/20/18

18.5/25/22

22/30/26

30/40/34

37/50/43

50

50

50

60

115

115

AC660

AC660

AC660

AC660

AC660

AC660

-

2/24

-

3/34

5/56

5/56

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5/28

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7.5/40

10/50

10/50

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10/28

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15/42

20/54

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16

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16

16

16

A600,Q300

A600,Q300

A600,Q300

A600,Q300

A600,Q300

A600,Q300

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130

130

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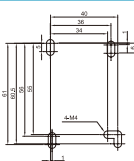
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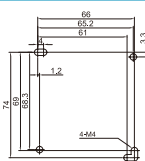
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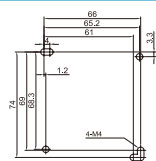
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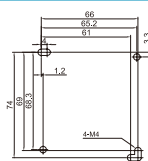
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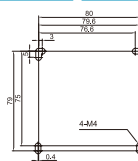
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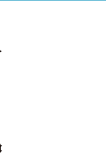
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MPU-11



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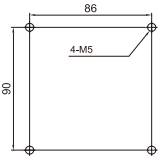
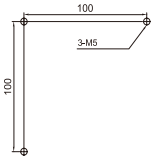
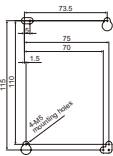
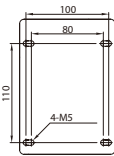


MPU-11

Magnetic Contactor / Motor Starter ◆ AC control



Motor Starter

Model			80T	100T	100E	125T		
Type	Magnetic Contactor	Nonreversing		S-P80T	S-P100T	S-P100E	S-P125T	
		Reversing		S-2 x P80T	S-2 x P100T	S-2xP100E	S-2 x P125T	
	Motor Starter	without enclosure	Nonreversing	MSO-P80T	MSO-P100T	MSO-E100	MSO-P125T	
			Reversing	MSO-2 x P80T	MSO-2 x P100T	MSO-2xE100	MSO-2 x P125T	
		with enclosure	Nonreversing	MS-P80T	MS-P100T	MS-E100	MS-P125T	
			Reversing	MS-2 x P80T	MS-2 x P100T	MS-2xE100	MS-2 x P125T	
		with enclosure (push button)	Nonreversing	-	-	MS-E100PB	-	
	TOR		Standard	TH-P60ES(TA)	TH-P120 E(TA)	TH-E100E	TH-P120 E(TA)	
			Differential	TH-P60ES(TA)PP	TH-P120 (TA)PP	TH-E100PP	TH-P120 (TA)PP	
Rated Capacity	IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660	3 Ø	240V	22/30/80	30/40/105	30/ 40/ 105	37/50/135	
			380/415V	45/60/80	60/80/105	55/ 75/ 100	75/100/130	
			440V	45/60/75	60/80/105	60/ 80/ 100	75/100/130	
			550V	45/60/60	60/80/85	60/ 80/ 85	75/100/105	
			660V	45/60/50	60/80/70	60/ 80/ 70	75/100/90	
	AC 3 (kW/HP/A)		Operation current (Ith) AC1 (A)	115	150	135	170	
			Rated insulation voltage (V)	AC660	AC660	AC690	AC660	
	UL 508 CSA-C22.2	1 Ø	100~120V	7.5/80	-	—	-	
			200~240V	15/68	-	—	-	
		3 Ø	200~240V	25/68	30/80	—	50/130	
			380~480V	50/65	60/77	—	100/124	
			550~600V	60/62	60/62	—	100/99	
			AC3 (HP/A)		Operation current (Ith) AC1 (A)	115	150	—
				Rated insulation voltage (V)	AC600	AC600	—	AC600
	NEMA			3	3	—	3	
Auxiliary Contact	Auxiliary Contact		Standard	2NO 2NC	2NO 2NC	1NO 1NC	2NO 2NC	
			Special	-	-	—	-	
	IEC 60947-5-1 EN 60947-5-1	220V		1.6	1.6	3*	3.3	
		380V		0.95	0.95	1.9	1.6	
	Operation current (Ith) AC1(A)		16	16	10	16		
	Contact class (UL)		A600,Q300	A600,Q300	A600, Q300	A600,Q300		
Performance	Electrical life (AC3) (10 thousand)		120	120	1 Mil.	120		
	Mechanical life (10 thousand)		600	600	6 Mil.	600		
	Operation (Time/Hour)		1200	1200	1200	1200		
Magnetic Contactor	Weight (kg)		1.5	2.35	1.34	2.7		
	Appearance Dimensions (W×H×D) (mm)		100x142x116	120x116x129.5	85x125x127	106x152.5x140		
	Installation Dimension (mm)							
Mechanical Interlock			MPU-50	Assembled and adjusted by the factory	MEU-11	MPU-125		

Note: Mark * means the value is @240V

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150T

200T

220T

300T

400T

S-P150T

S-P200T

S-P220T

S-P300T

S-P400T

S-2 x P150T

S-2 x P200T

S-2 x P220T

S-2 x P300T

S-2 x P400T

MSO-P150T

MSO-P200T

MSO-P220T

MSO-P300T

MSO-P400T

MSO-2 x P150T

MSO-2 x P200T

MSO-2 x P220T

MSO-2 x P300T

MSO-2 x P400T

MS-P150T

MS-P200T

MS-P220T

-

-

MS-2 x P150T

MS-2 x P200T

MS-2 x P220T

-

-

-

-

-

-

-

TH-P120 E(TA)

TH-P200T E

TH-P200T E

TH-P400T E

TH-P400T E

TH-P120 (TA)PP

TH-P200T PP

TH-P200T PP

TH-P400T PP

TH-P400T PP

45/60/165

55/75/200

65/85/225

90/125/300

110/150/400

90/125/160

110/150/190

120/160/220

160/220/300

220/300/400

90/125/160

110/150/190

120/160/220

185/220/300

250/340/400

90/125/130

110/150/150

132/180/180

185/250/263

250/340/360

90/125/110

110/150/125

132/180/150

200/300/200

280/380/280

225

275

315

500

635

AC660

AC660

AC660

AC1000

AC1000

-

-

-

-

-

-

-

-

-

-

60/154

75/192

75/192

100/248

125/312

125/156

150/180

150/180

200/240

250/302

125/125

150/144

150/144

200/192

300/289

225

275

315

500

635

AC600

AC600

AC600

AC600

AC600

3

4

4

5

5

2NO 2NC

2NO 2NC

2NO 2NC

2NO 2NC

2NO 2NC

-

-

-

-

-

3.3

3.3

3.3

3.3

3.3

1.6

1.6

1.6

1.6

1.6

16

16

16

10

10

A600,Q300

A600,Q300

A600,Q300

A600,Q300

A600,Q300

120

120

120

120

120

600

600

600

600

600

1200

1200

1200

1200

1200

2.7

4.35

4.35

9.75

9.75

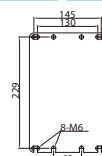
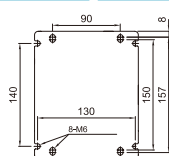
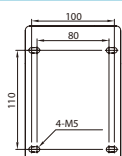
106x152.5x140

138 x 185 x 159.5

138 x 185 x 159.5

164x246x196.5

164x246x196.5



MPU-125

MPU-125

MPU-125

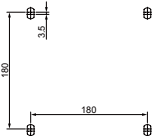
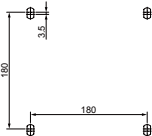
MPU-125

MPU-125

Magnetic Contactor / Motor Starter ◆ AC control



Motor Starter

Model				630T	800T	1260T
Type	Magnetic Contactor	Nonreversing		S-P630T	S-P800T	S-P1260T
		Reversing		S-2 x P630T	—	—
	Motor Starter	without enclosure	Nonreversing	—	—	—
			Reversing	—	—	—
		with enclosure	Nonreversing	—	—	—
			Reversing	—	—	—
		with enclosure (push button)		Nonreversing	—	—
	TOR		Standard	TH-P600 E	TH-P600 E	—
			Differential	TH-P600 PP	TH-P600 PP	—
Rated Capacity	IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660 AC 3 (kW/HP/A)	3 ∅	240V	200/270/630	350/340/800	—
			380/415V	335/450/630	450/610/800	—
			440V	400/545/630	450/610/800	—
			550V	400/545/552	450/610/620	—
			660V	450/610/450	475/645/475	—
		Continuous current (Ith) AC1 (A)		800	1000	1260
		Rated insulation voltage (Ui) (V)		AC1000	AC1000	AC1000
	UL 508 CSA-C22.2 AC3 (HP/A)	1 ∅	100~120V	—	—	—
			200~240V	—	—	—
		3 ∅	200~240V	—	—	—
			380~480V	—	—	—
			550~600V	—	—	—
		Continuous current (Ith) AC1 (A)		—	—	—
		Rated insulation voltage (Ui) (V)		—	—	—
	NEMA			6	7	7
Auxiliary Contact	IEC 60947-5-1 EN 60947-5-1 GB14048.4 AC 15	Contact	Standard	—	—	—
			Special	—	—	—
			220V	—	—	—
			380V	—	—	—
	Operation current (Ith) AC1 (A)		—	—	—	
	Contact class (UL)		—	—	—	
Electrical Life AC3			50	50	—	
Mechanical Life			300	300	300	
Operation (Time/Hour)			1200	1200	1200	
Magnetic Contactor	Weight (kg)		16.4	18.3	18.3	
	Appearance Dimensions (W×H×D) (mm)		309x304x255	309x338x255	309x338x255	
	Installation Dimension (mm)					
Mechanical Interlock			—	—	—	

*Note: S-P630T and S-P800T is equipped with AP-22N (2NO2NC) when ordered, S-P1260T can be purchase separated.

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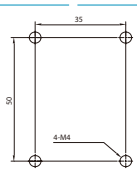
Magnetic Contactor / Motor Starter ◆ AC control

Mini Contactor



Thermal Overload Relay



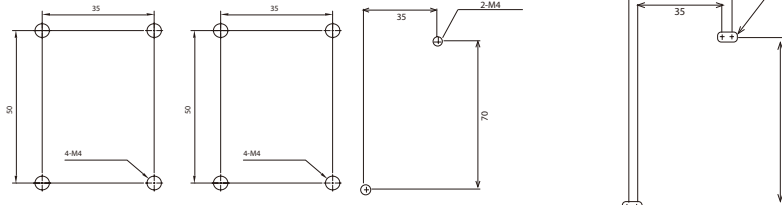
Model				06	09
Type	Magnetic Contactor	Nonreversing		S-P06	S-P09
		Reversing		S-2×P06	S-2×P09
	Motor Starter	without enclosure	Nonreversing	MSO-P06	MSO-P09
			Reversing	—	—
		with enclosure	Nonreversing	—	—
			Reversing	—	—
	with enclosure (push button)		Nonreversing	—	—
	TOR		Standard	—	—
Differential			TH-P09PP	TH-P09PP	
Rated Capacity	IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660	3 Ø	240V	1.5/ 2/ 7.5	2.2/ 3/ 10.1
			380/415V	3/ 4/ 6.6	4/ 5.5/ 9
			440V	3/ 4/ 6.5	4/ 5.5/ 8.5
			550V	3/ 4/ 5	4/ 5.5/ 6.5
			660V	3/ 4/ 4	4/ 5.5/ 5
	AC 3 (kW/HP/A)	Continuous Current (Ith) AC1 (A)		20	20
		Rated insulation voltage (V)		AC690	AC690
	UL 508 CSA-C22.2	1 Ø	100~120V	0.25/ 5.8	0.5/ 9.8
			200~240V	1/ 8	1.5/ 10
		3 Ø	200~240V	2/ 6.8	3/ 9.6
			380~480V	3/ 4.8	5/ 7.6
			550~600V	3/ 3.9	5/ 6.1
	AC3 (HP/A)	Continuous Current (Ith) AC1 (A)		20	20
		Rated insulation voltage (V)		AC600	AC600
NEMA				00	00
Auxiliary Contact	IEC 60947-5-1 EN 60947-5-1 GB14048.4	Contact	Standard	1NO	1NO
			Special	1NC	1NC
			220V	3.3	3.3
			380V	1.9	1.9
	Continuous Current (Ith) AC1 (A)		10	10	
	AC 15	Contact class (UL)		A600	A600
Electrical Life AC3			1.6 Mil.	1.6 Mil.	
Mechanical Life			10 Mil.	10 Mil.	
Operation (Time/Hour)			1200	1200	
Magnetic Contactor	Weight (kg)		0.15	0.15	
	Appearance Dimensions (W×H×D) (mm)		46×58×51	46×58×51	
	Installation dimension (mm)				
	Mechanical Interlock		—	—	

Type		09
Standard	Contact Assembled Type	—
	Independently Installed Type	—
With phase failure protection	Contact Assembled Type	TH-P09PP
	Independently Installed Type	—
Reset Mode		Manual / Automatic
Magnetic Contactor		S-P06, S-P09.
TOR Adjustment Range (A)		Rating (A) Range (A)
		0.13 0.1~0.16
		0.20 0.16~0.24
		0.32 0.24~0.4
		0.5 0.4~0.6
		0.8 0.6~1
		1.3 1~1.6
		2.0 1.6~2.4
Auxiliary Contact		1NO 1NC
Weight		0.075
Dimensions (mm) (W×H×D)		45.5×64.8×50

Coil Specification Table

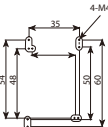
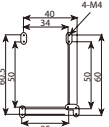
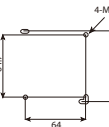
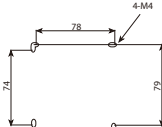
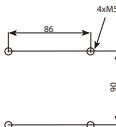
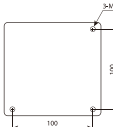
◆ S-P06, S-P09						
Description	AC12V	AC24V	AC48V	AC110V	AC120V	AC220V
Coil rated specifications marking	12V 50Hz	24V 50Hz	48~50V 50Hz	100V 50Hz	110~120V 50Hz	200~220V 50Hz
	12V 60Hz	24V 60Hz	48~50V 60Hz	100~110V 60Hz	115~120V 60Hz	220V 60Hz
Description	AC230V	AC240V	AC380V	AC440V	AC480V	AC550V
Coil rated specifications marking	230V 50Hz	220~240V 50Hz	346~380V 50Hz	400V 50Hz	415~440V 50Hz	500V 50Hz
	230V 60Hz	240~260V 60Hz	380V 60Hz	400~440V 60Hz	460~480V 60Hz	500~550V 60Hz

Magnetic Contactor / Motor Starter ◆ DC control

									
Model				06	09	11	16	21	
Type	Magnetic Contactor	Nonreversing		SD-P06	SD-P09	SD-P11	SD-P16	SD-P21	
		Reversing		SD-2xP06	SD-2xP09	SD-2xP11	SD-2xP16	SD-2xP21	
	Motor Starter	without enclosure	Nonreversing	-	-	MDO-P11	MDO-P16	MDO-P21	
			Reversing	-	-	MDO-2xP11	MDO-2xP16	MDO-2xP21	
		with enclosure	Nonreversing	-	-	-	-	-	
			Reversing	-	-	-	-	-	
		with enclosure (push button)	Nonreversing	-	-	-	-	-	
			TOR	Standard	-	-	TH-P12ES	TH-P20ES	TH-P20ES
		Differential		TH-P09PP	TH-P09PP	TH-P12ES PP	TH-P20ES PP	TH-P20ES PP	
		Rated Capacity	IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660	3 ø	240V	1.5 / 2 / 6	2.2 / 3 / 9	3.5 / 4.5 / 13	4.5 / 6 / 18
380/440V	3 / 4 / 6				4 / 5.5 / 9	5.5 / 7.5 / 12	7.5 / 10 / 18	11 / 15 / 21	
550V	3 / 4 / 6				4 / 5.5 / 9	5.5 / 7.5 / 9	7.5 / 10 / 13	11 / 15 / 17	
660V	-				-	5.5 / 7.5 / 7	7.5 / 10 / 9	11 / 15 / 14	
AC 3 (kW/HP/A)	Continuous Current (Ith)		AC1 (A)	20	20	20	30	32	
	Rated insulation voltage		(Ui)	690	690	660	660	660	
UL 508 CSA-C22.2	1 ø		110~120V	0.25 / 5.8	0.5 / 9.8	0.5 / 9.8	1 / 16	2 / 24	
			220~240V	1 / 8	1.5 / 10	2 / 12	3 / 17	3 / 17	
	3 ø		220~240V	2 / 6.8	3 / 9.6	3 / 9.6	5 / 15.2	7.5 / 22	
			440~480V	3 / 4.8	5 / 7.6	7.5 / 11	10 / 14	15 / 21	
			550~600V	3 / 3.9	5 / 6.1	10 / 11	10 / 11	15 / 17	
	AC3 (HP/A)		Continuous Current (Ith)		AC1 (A)	20	20	24	30
Rated insulation voltage			(Ui)	600	600	600	600	600	
NEMA				0	0	0	0	1	
Auxiliary Contact	Auxiliary contact		Standard	1NO	1NO	1NO	1NO1NC	1NO1NC	
			Special	1NC	1NC	1NC	-	-	
	Control coil voltage DC (V)			24 / 36 / 48 / 110 / 220 / 240					12 / 24 / 30 / 48 / 72 / 110 / 125 / 220
	EC 60947-5-1 EN 60947-5-1	220V		3.3	3.3	1.6	1.6	1.6	
		380V		1.9	1.9	0.95	0.95	0.95	
	Rated heating current (Ith)			(A)	10	10	16	16	16
	Contact class			(UL)	A600	A600	A600	A600	A600
Performance	Electrical life (AC3) (10 thousand)			120	120	120	120	120	
	Mechanical life (10 thousand)			600	600	600	600	600	
Magnetic Contactor	Weight		(kg)	0.43	0.43	0.33	0.37	0.38	
	Appearance Dimensions (W×H×D)		(mm)	46 x 58 x 51	46 x 58 x 51	43 x 81 x 83.5	53.5×81×83.5	53.5×81×83.5	
	Installation dimension		(mm)						

Capacitor Contactors



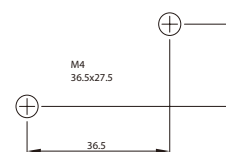
Type			SC-P12	SC-P16	SC-P20	SC-P25	SC-P33	SC-P45	SC-P60	SC-P70	
Rated insulation voltage (Ui)			(V)	690	690	690	690	690	690	690	
Rated Capacity	IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660 AC 3 (kW/HP/A)	AC-6b 3 ∅ (kVar/A)	200~240V	6.7/ 18	8.5/ 22	10/ 26	15/ 39	20/ 48	25/ 66	35/ 92	60/118
			400~440V	12.5/ 16	16.7/ 22	20/ 26	25/ 33	33.3/ 44	45/ 59	60/ 86	70/101
			660~690V	18/ 15	24/ 20	30/ 25	36/ 30	48/ 40	58/ 49	75/ 63	90/78
	Continuous Current (Ith)		AC1 (A)	20	30	40	50	80	90	100	135
	Auxiliary Contact			2NO or 1NO 1NC	2NO 1NC	2NO 1NC	3NO 2NC	3NO 2NC	3NO 2NC	3NO 2NC	3NO 2NC
Auxiliary Contact	IEC 60947-5-1 EN 60947-5-1	AC12 (A)	110V	6	6	6	6	6	6	6	6
			220V	5	5	5	5	5	5	5	5
			440V	3	3	3	3	3	3	3	3
			550V	3	3	3	3	3	3	3	3
	Continuous Current (Ith)		(A)	16	16	16	16	16	16	16	16
Mechanical Life / Electrical Life (AC-6b) ≤440V (10 thousand)				100 / 30	100 / 30	100 / 30	100 / 30	100 / 30	100 / 30	600/20	
Operation Frequency			(time/ hour)	240	240	240	240	240	100	100	
Magnetic Contactor	Weight		(kg)	0.42	0.47	0.47	0.63	1.14	1.14	1.59	2.4
	Installation Dimensions (W×H×D)		(mm)	44×108×134	54×112×134	54×112×134	74×185×144	89×185×158	89×185×158	101×195×168	120 x 180 x 169
	Dimensions		(mm)								

Capacitor Unit



Capacitor Unit	Magnetic Contactor	Maximum operating power(kvar)			Max. peak current(A)
		220~240V	400~440V	660~690V	
AP-40 A	S-P11	6.7	12.5	18	560
	S-P16	8.5	16.7	24	560
	S-P21	10	20	30	1250
AP-40 B	S-P40T	15	25	36	1900
	S-P50T	20	33.3	48	2160
	S-P60T	25	45	58	3040
	S-P80T	35	60	75	3040

Motor Starter

MMS

Magnetic Control Relays



Type		SR-P40	SR-P50	SR-P80
Auxiliary Contact		4NO 3NO 1NC 2NO 2NC	5NO 4NO 1NC 3NO 2NC 2NO 3NC	8NO 7NO 1NC 6NO 2NC 5NO 3NC 4NO 4NC
Rated Capacity IEC 60947-4-1 AC15 (A)	220V	1.6	1.6	1.6
	380V	0.95	0.95	0.95
Rated insulation voltage (Ui) (V)		660	660	660
Operation current (Ith) (A)		16	16	16
Contact Class (UL)		A600, Q300	A600, Q300	A600, Q300
Electrical Life (10 thousand)		50 and up	50 and up	50 and up
Mechanical Life (10 thousand)		500	500	500
On/ Off Frequency (time per / hour)		500	500	500

Definite Purpose Magnetic Contactor | SF Series

Type		20	25	30	35	40
		 C1	 C2			 C3
Type	1 Pole	SF20C1	SF25C1	SF30C1	SF35C1	SF40C1
	2 Pole	SF20C2	SF25C2	SF30C2	SF35C2	SF40C2
	1Pole w/shunt	SF20C3	SF25C3	SF30C3	SF35C3	SF40C3
Start Current(A) (Per Pole)	AC 240V / AC 277V	120	150	180	180	180
	AC 480V	100	125	150	150	150
	AC 600V	80	100	120	120	120
Start Current(A) (Single Phase) (2 Pole)	AC 240V / AC 277V	120	150	180	210	240
	AC 480V	100	125	150	175	200
	AC 600V	80	100	120	140	160
Rated Current w/resistance load (A)		30	35	40	50	50
Full Rated Current (A)		20	25	30	35	40
Mechanical / Electrical life (10 thousand)		50/25	50/25	50/25	50/25	50/25
Operation frequency (time / hour)		360	360	360	360	360
Coil Control Voltage 50/60 Hz		24 / 110-120 / 200 / 220 / 208-240 / 277				



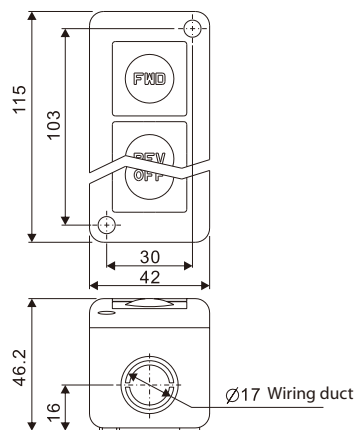
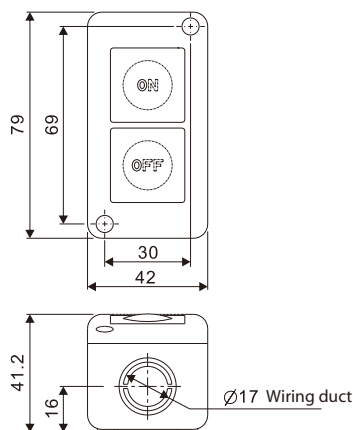
Star-delta Starter

Model		21	35	50	60	80	100	125	150	220
Type	Without enclosure (no CT)	SDO-P21	SDO-P35	SDO-P50	SDO-P60	SDO-P80	SDO-P100	SDO-P125	SDO-P150	SDO-P220
	Without enclosure (with CT)	SDO-P21T	SDO-P35T	SDO-P50T	SDO-P60T	SDO-P80T	SDO-P100T	SDO-P125T	SDO-P150T	SDO-P220T
	With enclosure (no Ammeter)	SDE-P21	SDE-P35	SDE-P50	SDE-P60	SDE-P80	SDE-P100	SDE-P125	SDE-P150	SDE-P220
	With enclosure (With Ammeter)	SDA-P21	SDA-P35	SDA-P50	SDA-P60	SDA-P80	SDA-P100	SDA-P125	SDA-P150	SDA-P220
Rated Capacity (kW/HP)	200V~220V	11/ 15	19/ 25	22/ 30	30/ 40	37/ 50	45/ 60	55/ 75	75/ 100	110/ 150
	380V~440V	19/ 25	30/ 40	45/ 60	55/ 75	75/ 100	90/ 125	110/ 150	132/ 180	200/ 260
AC Magnetic Contactor	MCM	S-P21	S-P35T	S-P50T	S-P60T	S-P80T	S-P100T	S-P125T	S-P150T	S-P220T
	MCD	S-P21	S-P35T	S-P50T	S-P60T	S-P80T	S-P100T	S-P125T	S-P150T	S-P220T
	MCS	S-P11	S-P16	S-P21	S-P21	S-P35T	S-P35T	S-P50T	S-P50T	S-P60T
Thermal Overload Relay		TH-P20	TH-P60	TH-P60	TH-P120	TH-P120	TH-P120	TH-P220T	TH-P220T	TH-P400T
		TH-P20TA	TH-P60TA	TH-P60TA	TH-P120TA	TH-P120TA	TH-P120TA	TH-P220T	TH-P400T	TH-P400T
Conducting wire size of motor (mm ²)	Line side	2.5~16	2.5~25	2.5~35	2.5~50	10~70	10~95	35~150	35~150	35~240
	Load side	2.5~10	2.5~16	2.5~25	2.5~35	4~50	4~70	10~95	10~90	16~150
	Control side	1~2.5	1~2.5	1~2.5	1~2.5	1~2.5	1~2.5	1~2.5	1~2.5	1~2.5

Push Button | PB Series

Type	PB2	PB3
Contact schema		

External dimensions (mm)



WET.

72.5g

110g

Separate Mounting Unit



Auxiliary Contact Block

◆ AP Series



Installation		2P FRONT MOUNTED TYPE						4P FRONT MOUNTED TYPE						
Model		AP-20	AP-11	AP-02	AP-20N	AP-11N	AP-02N	AP-40	AP-31	AP-22	AP-40N	AP-31N	AP-22N	AP-13N
Contact		2NO	1NO 1NC	2NC	2NO	1NO 1NC	2NC	4NO	3NO 1NC	2NO 2NC	4NO	3NO 1NC	2NO 2NC	1NO 3NC
Applicable contactor		SR-P40, SR-P50 S-P09T~ S-P80T SD-P11~ SD-P21			S-P100E S-P100T S-P630T~ S-P1260T			SR-P40, SR-P50 S-P09T~ S-P80T SD-P11~ SD-P21			S-P100E S-P100T S-P630T~ S-P1260T			
Rated Capacity AC 15 (A)	220V	1.6			3			1.6			3			
	380V	0.95			1.9			0.95			1.9			
Operation current	(Ith) (A)	16			10			16			10			



Auxiliary Contact Block

◆ AP Series

Installation		SIDE MOUNTED TYPE	
Model		APS-11	APL-11
Contact		1NO 1NC	1NO 1NC
Applicable contactor		SR-P40, SR-P50 S-P09T~S-P60T SD-P11~SD-P21	S-P125, S-P150T S-P200T, S-P220T S-P300T, S-P400T
Rated Capacity AC 15 (A)	220V	1.6	
	380V	0.95	
Operation current	(Ith) (A)	16	

Auxiliary Contact Block

◆ MAP Series

Installation		2P FRONT MOUNTED TYPE			4P FRONT MOUNTED TYPE		
Model		MAP-20	MAP-11	MAP-02	MAP-40	MAP-31	MAP-22
Contact		2NO	1NO 1NC	2NC	4NO	3NO 1NC	2NO 2NC
Applicable contactor		S-P06, S-P09.					
Rated Capacity AC 15 (A)	220V	3.3					
	380V	1.9					
Operation current	(Ith) (A)	10					



Timer

Model		PTR-30	PRT-30F	PTR-180	PRT-180F
Delay type		On Delay	Off Delay	On Delay	Off Delay
Ajustable time (Sec)		0~30		0~180	
Rated Capacity AC 15 (A)	220V	1.6			
	380V	0.95			
Operation current (Ith) (A)		16			
Applicable contactor		SR-P40, SR-P50, S-P09T~60T, SD-P11~21			



Surge unit

Model	BMSACW220V	BMSACW380V
Applicable contactor	SR-P40, SR-P50, S-P9T~S-P60T.	

Mechanical Interlock

Model	MPU-11	MPU-21	MPU-50
Applicable contactor	S-P11/S-P15/S-P35T~60T	S-P12/S-P16~30T	S-P80T

Coil Characteristics

Model		S-P06 S-P09	S-P9T S-P12T	S-P11 S-P15	S-P16 S-P21 S-P25 S-P32T	S-P30T S-P35T S-P38T S-P40T	S-P50T S-P60T S-P80T	S-P100T	S-P125T S-P150T		S-P200T S-P220T		S-P300T S-P400T	S-P630T S-P800T S-P1260T
Coil type		AC	AC	AC	AC	AC	AC	AC	AC	AC/DC	AC	AC/DC	AC/DC	AC/DC
Coil Capacity (VA)	Impulse	35	76	76	76	72	250	319	370	350	440	350	420	500~1000
	Operation	8	9	9	9	12	28	36	42	20	50	20	27	15~35
Power Consumption (W)		2.5	2.7	2.7	2.7	3	7	11	10	1.3~8	12	1.3~8	3	4~8
Operation Vot. (Us)	On	55~70%	55~75%	55~75%	59~75%	60~75%	63~75%	65~75%	75~80%	Above 75%	75~80%	Above 75%	65~80%	Above77%
	Off	25~50%	35~50%	34~48%	36~52%	40~57%	40~57%	40~55%	40~55%	20~62%	40~60%	20~62%	20~50%	20~60%
Close Time (ms)	Aux. OFF	8~15	6~14	6~14	6~14	6~13	6~13	18~28	9~20	15~45	10~19	20~45	22~37	-
	Aux. ON	10~18	12~20	12~20	12~25	12~20	12~20	22~32	15~24	18~45	17~25	20~45	25~40	-
	Contact ON	10~18	12~20	12~20	12~25	12~20	12~20	22~32	10~20	18~50	12~27	24~50	30~45	50~70
Open Time (ms)	Aux. OFF	9~20	13~22	13~22	13~24	10~17	10~17	50~100	9~18	30~70	10~20	40~70	40~60	-
	Aux. ON	12~23	6~17	6~17	6~17	5~12	5~12	48~98	7~15	30~70	7~18	25~70	31~51	-
	Contact ON	9~20	6~17	6~17	6~17	5~12	5~12	46~96	7~15	40~70	7~20	40~70	30~50	40~60

Coil Specifications Table

◆ S-P9T~S-P25, S-P30T~P220T, SR-P40~P80, SC-P12~P60						
Description	AC12V	AC24V	AC48V	AC110V	AC120V	AC220V
Coil rated specifications marking	12V 50Hz 12V 60Hz	24V 50Hz 24V 60Hz	48~50V 50Hz 48~50V 60Hz	100V 50Hz 100~110V 60Hz	110~120V 50Hz 115~120V 60Hz	200~220V 50Hz 220V 60Hz
Description	AC230V	AC240V	AC380V	AC440V	AC480V	AC550V
Coil rated specifications marking	230V 50Hz 230V 60Hz	220~240V 50Hz 240~260V 60Hz	346~380V 50Hz 380V 60Hz	400V 50Hz 400~440V 60Hz	415~440V 50Hz 460~480V 60Hz	500V 50Hz 500~550V 60Hz

"Note: Control voltage of SR-P40 can be customized DC 12/24/30/48/72/110/125/220V."

◆ S-P300T~P400T					
Description	AC48V	AC100V	AC220V	AC380V	AC550V
Coil rated specifications marking	AC 48~50V 50/60Hz DC 48V	AC 100~127V 50/60Hz DC 100~127V	AC 220~250V 50/60Hz DC 200~250V	AC 265~450V 50/60Hz	AC 440~575V 50/60Hz

◆ S-P630T~S-P1260T			
Description	AC110V	AC220V	AC380V
Coil rated specifications marking	AC 100~127V 50/60Hz DC 100~127V	AC 200~250V 50/60Hz DC 200~250V	AC 380~440V 50/60Hz

Selection Table ◆ Direct On-Line Starter

Motor rated capacity kW (HP)		3 ø 200V~220V													
		Heating element rating (A)		Selection of the contactor											
0.016	(1/47)	0.13A	0.1~0.16A	S-P06	S-P09										
0.025	(1/30)	0.2A	0.16~0.24A												
0.04	(1/19)	0.32A	0.24~0.4A												
0.09	(1/8)	0.5A	0.4~0.6A												
0.12	(1/6)	0.8A	0.6~1.0A												
0.25	(1/3)	1.3A	1.0~1.6A												
0.37	(1/2)	2.0A	1.6~2.4A												
0.75	(1)	3.2A	2.4~4.0A												
1.1	(1 1/2)	5A	4.0~6.0A	S-P9T, S-P11, S-P12T	S-P15, S-P16	S-P21	S-P25	S-P30T, S-P32T	S-P35T, S-P38T	S-P40T					
1.5	(2)	7.5A	6.0~9.0A												
0.03	(1/25)	0.25A	0.19~0.31A												
0.05	(1/15)	0.4A	0.3~0.5A												
0.1	(1/8)	0.6A	0.45~0.75A												
0.15	(1/5)	0.9A	0.7~1.1A												
0.2	(1/4)	1.2A	0.9~1.5A												
0.3	(2/5)	1.7A	1.3~2.1A												
0.4	(1/2)	2.1A	1.6~2.6A												
0.75	(1)	3.3A	2.5~4.1A												
1.1	(1 1/2)	4.4A	3.4~5.4A												
1.5	(2)	6.5A	5~8A												
2.2	(3)	9A	7~11A												
3	(4)	11A	9~13A												
3.7	(5)	15A	12~18A												
5.5	(7 1/2)	21A	17~24A												
6.5	(8 1/2)	28A	22~34A												
7.5	(10)														
9	(12 1/2)	33A	28~38A												
11	(15)	40A	32~48A												
15	(20)	54A	43~65A												
19	(25)	67A	54~80A												
22	(30)	80A	60~100A												
25	(35)														
30	(40)	105A	80~130A												
37	(50)	130A	100~160A												
45	(60)	160A	120~200A												
55	(75)														
65	(85)	200A	150~250A												
75	(100)	260A	200~320A												
90	(125)														
110	(150)	350A	260~440A												
132	(180)														
160	(220)	500A	400~600A												

M-600C

Motor Starter

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Selection Table ◆ λ - Δ Starter

Heater selection table (A)	Motor output kW (HP)				TH selection of λ-Δ Starter																	
	A		B		21		35		50		60		80		100		125		150		220	
	200~220V		380~440V		A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
6.5	1.5	(2)	3	(4)	TH-P20	TH-P20																
9	1.9	(2 1/2)	3.7	(5)																		
9	2.2	(3)	4.5	(6)																		
11	3	(4)	5.5	(7 1/2)																		
15	3.7	(5)	7.5	(10)																		
15	4.5	(6)	10	(13)																		
21	5.5	(7 1/2)	11	(15)	TH-P20TA	TH-P20TA	TH-P60	TH-P60	TH-P60	TH-P60												
28	6.5	(8)	14	(19)																		
28	7.5	(10)	15	(20)																		
33	9	(12 1/2)	19	(25)																		
40	11	(15)	22	(30)																		
40	14	(19)	26	(35)																		
54	15	(20)	30	(40)																		
67	19	(25)	37	(50)																		
80	22	(30)	45	(60)																		
80	25	(34)	50	(67)																		
105	30	(40)	55	(75)																		
130	37	(50)	75	(100)																		
160	45	(60)	90	(125)																		
200	55	(75)	110	(150)																		
200	65	(85)	132	(200)																		
260	75	(100)	150	(200)																		
350	110	(150)	200	(260)																		

TH-P400T

TH-P400T

Modular Contactor



Model	Modular Contactors	Standard	SMC16-S		SMC25-S		SMC40-S		SMC63-S	
		Manual	SMC16-M		SMC25-M		SMC40-M		SMC63-M	
		Pole	2P	4P	2P	4P	2P	4P	2P	4P
Rated insulation voltage (Ui) IEC		(V)	500	500	500	500	500	500	500	500
Rated operational voltage (Ue) IEC / UL		(V)	230	400	250	400	250	400	250	400
Rated impulse withstand voltage (Uimp) IEC		(kV)	4	4	4	4	4	4	4	4
Rated operational current		AC-7a (A)	16	16	25	25	40	40	63	63
		AC-7b (A)	6	6	8.5	8.5	15	15	20	20
Continuous Current (Ith)		(A)	25	25	25	25	63	63	63	63
Mechanical Life (Thousand)		(Thousand)	100							
Electrical Life AC-7a (Thousand)		(Thousand)	10							
IP Level		—	IP20							

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Accessory

· Side mount auxiliary contacts



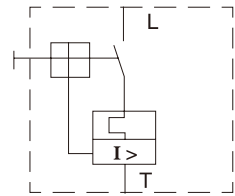
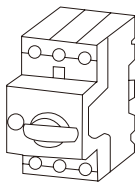
Model	Contacts	Voltage
smAX11	1NO1NC	500V

· 9mm spacing block



Model	Usage
smSB	When modular contactor is installed in distribution box, attach spacing block on both side of the contactor for heat radiation

MANUAL MOTOR STARTER



Power factor AC-3		Rated current	Overload adjustable range	Tripping current (A)	Type	
220V (kW)	400V (kW)	In (A)	Ie (A)	Id ± 20%	Button	Rotary
—	—	0.16	0.1-0.16	1.92	MR-32S-0.16	MR-32R-0.16
—	—	0.25	0.16-0.25	3	MR-32S-0.25	MR-32R-0.25
—	—	0.4	0.25-0.4	4.8	MR-32S-0.4	MR-32R-0.4
—	—	0.63	0.4-0.63	7.56	MR-32S-0.63	MR-32R-0.63
—	—	1	0.63-1	12	MR-32S-1	MR-32R-1
—	0.37	1.6	1-1.6	19.2	MR-32S-1.6	MR-32R-1.6
0.37	0.75	2.5	1.6-2.5	30	MR-32S-2.5	MR-32R-2.5
0.55	1.5	4	2.5-4	48	MR-32S-4	MR-32R-4
1.1	2.2	6.3	4-6.3	75.6	MR-32S-6.3	MR-32R-6.3
2.2	4	10	6-10	120	MR-32S-10	MR-32R-10
2.2	5.5	14	9-14	168	MR-32S-14	MR-32R-14
3.7	7.5	18	13-18	216	MR-32S-18	MR-32R-18
5.5	11	23	17-23	276	MR-32S-23	MR-32R-23
5.5	11	25	20-25	300	MR-32S-25	MR-32R-25
7.5	15	32	24-32	384	MR-32S-32	MR-32R-32
3	5.5	13	9-13	182	—	MR-65R-13
4	7.5	18	12-18	252	—	MR-65R-18
5.5	11	25	17-25	350	—	MR-65R-25
7.5	15	32	23-32	448	—	MR-65R-32
7.5	18.5	40	30-40	560	—	MR-65R-40
11	22	50	37-50	700	—	MR-65R-50
15	30	65	48-65	910	—	MR-65R-65

Side AX (MR-AN)

Front AX (MR-AE)

SHT (MR-AS)

AL (MR-AM)
(For Magnetic Trip)
AL (MR-AD)
(For Overload Trip)

UVT (MR-AU)

MMS

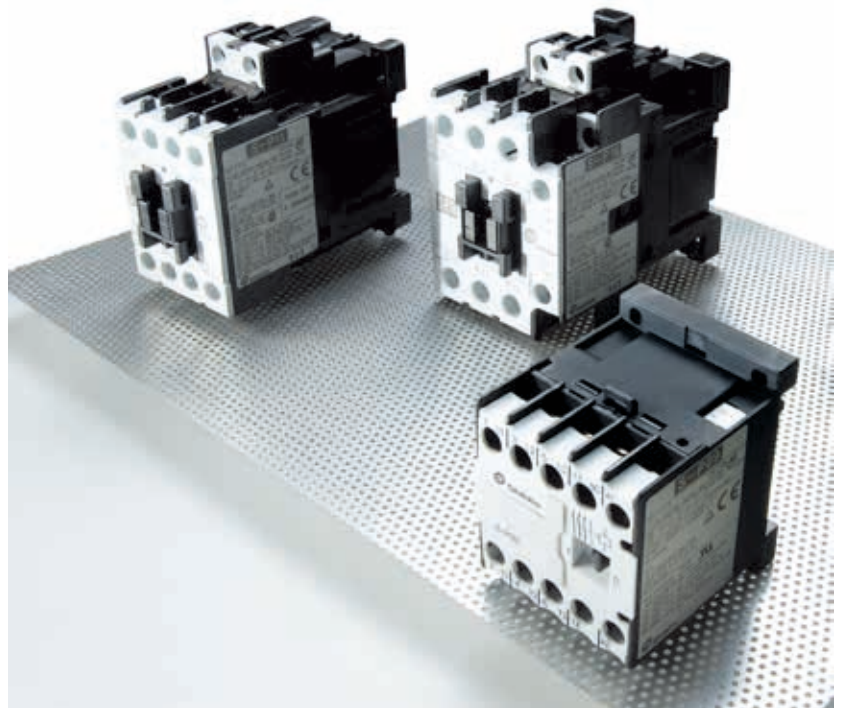


CIRCUIT BREAKER (MCCB / ELCB / EMCCB / MCB)

Breaker & Switchgear System



AIR CIRCUIT BREAKER



MAGNETIC CONTACTOR / SWITCH (CONTACTOR / MS / MMS)



AUTOMATIC TRANSFER SWITCHES



SURGE PROTECTIVE
DEVICE



SMART METER



INVERTER



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Breaker & switchgears overseas sales dept.

3F, No.9, Sec. 1, Chang-an E. Rd., Zhongshan Dist., Taipei City 10441, Taiwan

T. +886-2-2541-9822 F. +886-2-2581-2665

e-mail. b.export@seec.com.tw

<http://circuit-breaker.seec.com.tw>

Headquarters

16F, No.88, Sec. 6, Zhongshan N. Rd., Shilin Dist., Taipei City 11155, Taiwan

T. +886-2-2834-2662 F. +886-2-2836-6187

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