Shihlin Electric

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

OHSAS 18001 ISO 14001 ISO 9001

SHIHLIN ELECTRIC & ENGINEERING

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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			
	LTD	85	36	36	32	5*	2, 3, 4	10, 15, 16, 20, 25, 30, 32, 40, 50, 60, 63, 70, 75, 80, 100, 125		
	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			
	HTA	100	50	50	50	10*	3, 4	40, 50, 60, 63, 70, 75, 80, 100, 125, 140, 150, 160		
	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		

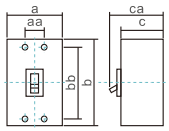
Frame Size	Rated Breaking Capacity (kA)				Pole	Rated Current In(A)	Accessory	
	Type	IEC60947-2						
		220V	380V	440V				
50	SN	10	7.5	7.5	3, 4	15, 20, 30, 40, 50.	Blank	No Acc.
100	SN	25	15	10	3, 4	15, 20, 30, 40, 50, 60, 75, 100.	AX	Auxiliary Switch
	HN	50	30	25	3, 4		AL	Alarm Switch
160	SN	50	30	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	

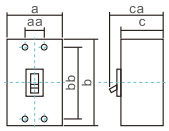
Frame Size	Rated Breaking Capacity (kA)				Pole	Ir Adjustable	Rated Current In(A)	Accessory	
	Type	IEC60947-2							
		220V(240V)	380V(415V)	690V					
125	STA	85	25	8	3, 4	0.8-0.9-1.0	15, 16, 20, 25, 30, 32, 40, 50, 60, 63, 75, 80, 100, 125	Blank	No Acc.
	LTA	85	36	8				AX	Auxiliary Switch
	HTA	100	50	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 Icu 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			—	5		7.5		15		
		440V	7.5			10			—	7.5		10		25		
		415V	7.5			10			5	10		10		25		
		380V	7.5			15			5	10		15		30		
		220V(240V)	10			25			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.

100											
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.

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℃		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		
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		

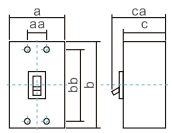
80% ~ 100% Adj. (A)

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.

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 busbar			Busbar / Without busbar		Busbar / Without busbar		Busbar / Without busbar		Busbar / Without busbar	
7000			7000		7000		7000		7000	
10000			10000		10000		10000		10000	
●			●		●		●		●	
●			●		●		●		●	
●			●		●		●		●	
●			●		●		●		●	
●			●		●		●		●	
●			●		●		●		●	
●			●		●		●		●	
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.

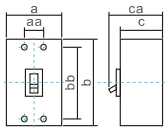
Molded Case Circuit Breaker

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	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	

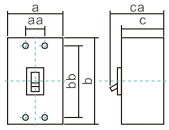
Molded Case Circuit Breaker

Frame size (AF) (Inm)			800							
Type			BM800-CN		BM800-SN		BM800-HN		BM800-RN	
Appearance										
Rated current In (A) at ambient temp. 40℃			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

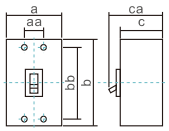
Molded Case Circuit Breaker (BMA Series)

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℃			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	 (mm)	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	
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 Icu AC	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		

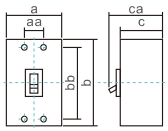
Note 1. Ics=100%Icu

630							
BMA630s-STD		BMA630s-LTD		BMA630s-HTD		BMA630s-RTD	
400, 500, 600, 630A		400, 500, 600, 630A		400, 500, 600, 630A		400, 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	
●		●		●		●	
●		●		●		●	
●		●		●		●	
●		●		●		●	
●		●		●		●	
●		●		●		●	
Thermal magnetic		Thermal magnetic		Thermal magnetic		Thermal magnetic	
Equipped		Equipped		Equipped		Equipped	

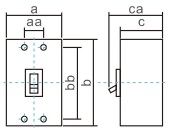
Molded Case Circuit Breaker (BMA Series)

Frame size (AF) (Inm)			630							
Model			BMA630s-STA		BMA630s-LTA		BMA630s-HTA		BMA630s-RTA	
Appearance										
Rated current In (A) at ambient temp. 40℃			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	 (mm)	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	
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℃			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	 (mm)	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			
		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 Icu 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)

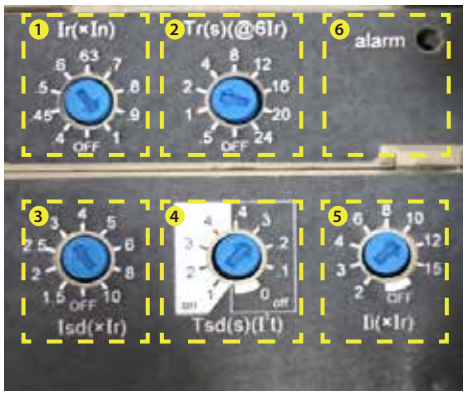
Frame size (AF) (Inm)			1000				1250				1600			
Model			BMA 1000-HED		BMA 1000-RED		BMA 1250-HED		BMA 1250-RED		BMA 1600-HED		BMA 1600-RED	
Appearance														
Rated current In (A) at ambient temp. 40℃			1000A				1250A				1600A			
Number of poles (P)			3	4	3	4	3	4	3	4	3	4	3	4
Rated insulation voltage 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 Icu AC	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°C ~ +70 °C
2. Storage Temp.: -40 °C ~ 85 °C
3. Altitude: ≦2000m
4. Pollution class: 3
5. Category: B
6. Relative humidity: ≦ 90%

Neutral Protection:

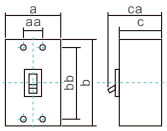
4P4D: 100% In 3D+N/2: 50% In 4P3D: No protection



1. Overload Setting Knob
   (Ir=0.4/0.45/0.5/0.6/0.63/0.7/0.8/0.9/1/OFF)
2. Overload Tripping Time Setting Knob
   (Tr=0.5/1/2/4/8/12/16/20/24/OFF)
3. (Isd=1.5/2/2.5/3/4/5/6/8/10/OFF)
4. (I2t on: Tsd=0.1/0.2/0.3/0.4; I2t off:
   Tsd=0/0.1/0.2/0.3/0.4)
5. Instantaneous Setting Knob
   (Ii=2/3/4/6/8/10/12/15/OFF)
6. Alarm indicator: Overload (red light)

Protection												
Long-time												
Current setting(A)		Ir=In×	0.4	0.45	0.5	0.6	0.63	0.7	0.8	0.9	1	OFF
Time Delay (s) Accuracy: ±20%		Tr (s)	0.5	1	2	4	8	12	16	20	24	OFF
		1.5×Ir	8	16	32	64	128	192	256	320	384	
		6×Ir	0.5	1	2	4	8	12	16	20	24	
		7.2×Ir	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%	Isd=Ir×	1.5	2	2.5	3	4	5	6	8	10	OFF
Time Delay Tsd(s)		I²t off	0	0.1	0.2	0.3	0.4					
		I²t on		0.1	0.2	0.3	0.4					
Time Delay (ms) at 10×Ir (I2t 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%	Ii=Ir×	2	3	4	6	8	10	12	15	OFF	
Tripping time		60 ±20 ms										

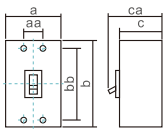
Molded Case Circuit Breaker (Electronic trip Unit)

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)	 (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		15	
		AC500V	30		50		30		50		30		50		30		50	
		AC440V	42		65		42		65		42		65		42		65	
		AC380V	50		70		50		70		50		70		50		70	
		AC220V	85		100		85		100		85		100		85		100	
Wiring			Clamp terminal				Clamp terminal				Clamp terminal				Busbar			
Optional accessories	Alarm switch(AL)		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Auxiiary 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.

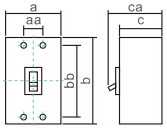
630				800				1000				1250				1600			
BMA630-HED		BMA630-RED		BMA800-HED		BMA800-RED		BMA1000-HED		BMA1000-RED		BMA1250-HED		BMA1250-RED		BMA1600-HED		BMA1600-RED	
630		630		800		800		1000		1000		1250		1250		1600		1600	
3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4
AC 1000		AC 1000		AC 1000		AC 1000		AC 1000		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

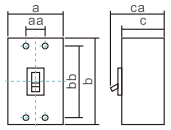
Frame size (AF) (Inm)			50		100			
Model			BL50-SN		BL100-SN		BL100-HN	
Appearance								
Rated current In (A) at ambient temp. 40°C			15, 20, 30, 40, 50.		15, 20, 30, 40, 50, 60, 75, 100.		15, 20, 30, 40, 50, 60, 75, 100.	
Phase & wire (P)			1ø2W, 3ø3W	3ø4W	1ø2W, 3ø3W	3ø4W	1ø2W, 3ø3W	3ø4W
Number of poles (P)			3	4	3	4	3	4
Rated voltage (VAC)			230, 400.		230, 400.		230, 400.	
High speed	Rated current sensitivity I△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△n A type (mA)		30-100-300-500mA(adj)		30-100-300-500mA(adj)		30-100-300-500mA(adj)	
	2I△n operating time (S)		0.1		0.1		0.1	
	5I△n operating time (S)		0.04		0.04		0.04	
Delay	Rated current sensitivity I△n AC type (mA)		100-300-500mA(adj)		100-300-500mA(adj)		100-300-500mA(adj)	
	Rated current sensitivity I△n A type (mA)		100-300-500-1000mA (adj)		100-300-500-1000mA (adj)		100-300-500-1000mA (adj)	
	2I△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△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	1.8
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 defult 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.

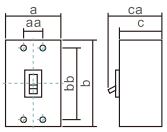
80% ~ 100% Adj. (A)

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 I△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)		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△n 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)	
	2I△n operating time (S)		0.1		0.1		0.1		0.1		0.1	
	5I△n operating time (S)		0.04		0.04		0.04		0.04		0.04	
Delay	Rated current sensitivity I△n 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 I△n 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)	
	2I△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		0.1- 0.4- 0.8- 2.0 adjustable		0.45- 1.0- 2.0 adjustable	
	2I△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		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		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△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△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△n operating time (S)		0.1		0.1		0.1		0.1	
	5I△n operating time (S)		0.04		0.04		0.04		0.04	
Delay	Rated current sensitivity I△n AC type (mA)		100-300-500mA(adj)		100-300-500mA(adj)		100-300-500mA(adj)		100-300-500mA(adj)	
	Rated current sensitivity I△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△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△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	13.0
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 Icu AC	440V	85		50		70		85	
		380V	85		50		70		100	
		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 defult 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℃			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△n AC type (mA)		100-300-500mA (adj)		100-300-500mA (adj)		100-300-500mA (adj)	
	Rated current sensitivity I△n A type (mA)		100-300-500-1000mA(adj)		100-300-500-1000mA(adj)		100-300-500-1000mA(adj)	
	2I△n operating time (S)		0.1		0.1		0.1	
	5I△n operating time (S)		0.04		0.04		0.04	
Delay	Rated current sensitivity I△n AC type (mA)		100-300-500mA(adj)		100-300-500mA(adj)		100-300-500mA(adj)	
	Rated current sensitivity I△n A type (mA)		100-300-500-1000mA(adj)		100-300-500-1000mA(adj)		100-300-500-1000mA(adj)	
	2I△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△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	13.5
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 Icu AC	440V	50		70		85	
		380V	50		70		100	
		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℃		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.	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	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
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		220		110/220*	380	
Rated Current In (A) At Ambient Temp. 40℃		15, 20, 30 40, 50.	15, 20, 30, 40, 50 60, 75, 100.		15, 20, 30 40, 50.	15, 20, 30, 40, 50.		60, 75100.		15, 20, 30 40, 50.	15, 20, 30, 40, 50 60, 75, 100.	
Number of poles (P)		1	2	3	1	2	3	2	3	1	2	3
Dimensions	a	25	50	75	25	50	75	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
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 (mm)	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
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℃		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	110V~220V	1.5		1.5, 2.5	1.5 / —
	380V~480V	—			— / 1.5
Dimensions (mm)	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

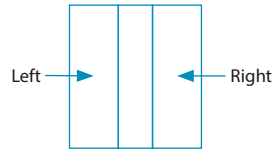
- AL: Alarm Switch / AX: Auxiliary Switch / SHT: Shunt Trip / UVT: Under Voltage Trip

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	●	○	▮ (#1.)	–	–	–	–
BM60-HBN BM100-HN BM125-SN/HN	3P 4P	● ●	○ ○	▮ ▮ (3P) ▮ (4P)	● ○	● ▮ (3P) ● ▮ (4P)	○ ▮ (3P) ○ (4P)	–
BL100-SN BL100-HN	3P 4P	●	○	▮ No UVT for 3P	–	● (#2.)	○ (#2.)	–
BM100-HS BM160-HS BM250-HS	3P 4P	● ●	○ ○	▮ (#1.)	● ○	● ▮ (#1.)	○ ▮ (#1.)	–
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	● ●	○ ○ ○	▮	● ● ○ AX can be installed in AL position	● ● ▮	○ ○ ▮	● ○ ▮
BL400-SN/HN/RN/UN	3P 4P	● ●	○ ○ ○	▮	● ● ○ AX can be installed in AL position	● ▮	○ ▮	–
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	● ●	○ ○ ○ ○	▮	● ● ○ ○ AX can be installed in AL position	● ● ▮	○ ○ ○ ▮	● ○ ○ ○ AX can be installed in AL position
BL630-HN/RN/UN BL800-SN/HN/RN	3P 4P	● ●	○ ○ ○	▮	● ● ○	● ▮	○ ▮	● ○ ▮
BM1000-HS BM1200-HS BM1600-HS	3P	●	○	▮	–	● ▮	○ ▮	–

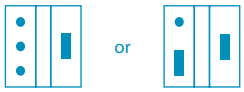
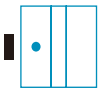
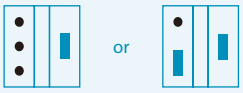
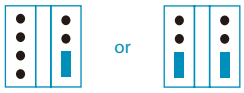
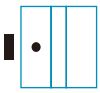
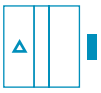
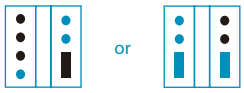
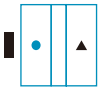
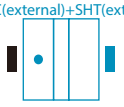
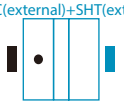
2P, 125Af and below : Accessories are installed on the right side.

Note:
1. Standard: AL and AX are installed on left side, SHT and UVT are installed on right side.
2. SHT is equipped with coil anti-burn switch.
3. BL series can not do right side installation.
4. UVT of BM30-SN~BM100-HN can not install on its left side.
5. #1 means have no UVT.
6. #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:

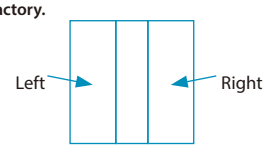
1. ZC is an essential accessory for H type controller, including ZSI regional interlocking accessories and communication function accessories.

2. If ZC or SHT are external, they can only be shipped after installation by the factory.

3. AX position can be installed at AL.

4. symbolic ● : AL ● : AX
| : SHT or UVT | : ZC
▲ : AX(internal), only be installed by manufacturer
△ : AL+AX

5.



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-STA/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-STA/LTA/HTA, BM250-HTA/RTA, BMA250-STA/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-STA/LTA
MA-125N	3P、4P	BM60-HBN, BM100-HN, BM125-SN/HN, BL100-SN/HN, BMA125-STA/LTA/HTA
MA-250N	3P、4P	BM160-SN/HN, BM250-SN/HN, BMA125-STA/LTA/HTA, BMA250-STA/LTA/HTA, BL160-SN, BL250-SN
MA-250T	3P、4P	BM160-HTA/RTA, BMA160-STA/LTA/HTA, BM250-HTA/RTA, BMA250-STA/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-STA/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-STA/LTA/HTA, BL160-SN, BL250-SN
	4	TC250N4P-K	—	
TC-250H	3	TC250H3P	—	BM100-HS, BM160/250-HS
TC-400N	3	TC400N3P	—	BM400-CN/SN/HN/RN/UN, BM630s-STD/LTD/HTD/RTD BM630s-STA/LTA/HTA/RTA, BMA400-LTA/HTA/RTA BMA400-HTD/RTD/HMF/RMF, BMA630s-STD/LTD/HTD/RTD BMA630s-STA/LTA/HTA/RTA, BL400-SN/HN/RN/UN
	4	TC400N4P	—	
TC-630N	3	TC630N3P	—	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
	4	TC630N4P	—	

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-STA/LTA/RTA
MT-250N	3P、4P	BM160-SN/HN, BM250-SN/HN, BL160-SN, BL250-SN, BMA160-STA/LTA/HTA, BMA250-STA/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-STA/ LTA/ HTA
	3P、4P	BM160/250- HN / HTA / RTA / SN , BM250 CN, BMA160/250-STA/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	

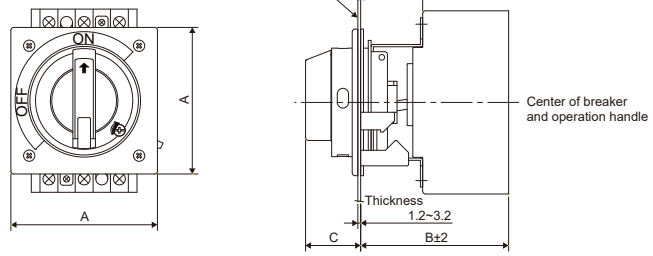
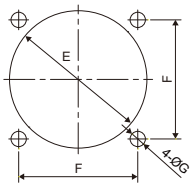
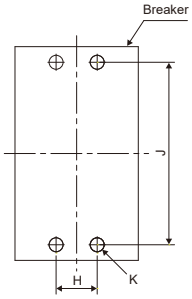


Fig. 1



Panel Dimension
Fig. 2



Breaker Dimension
Fig. 3

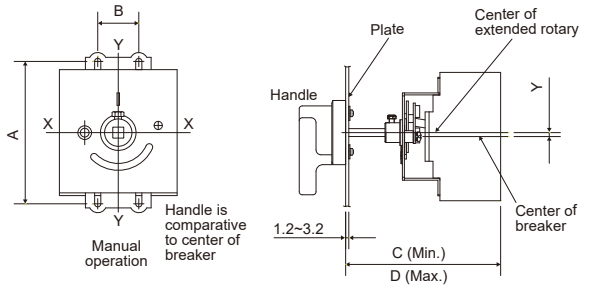
Note: 1. Optional for dust and water protection.

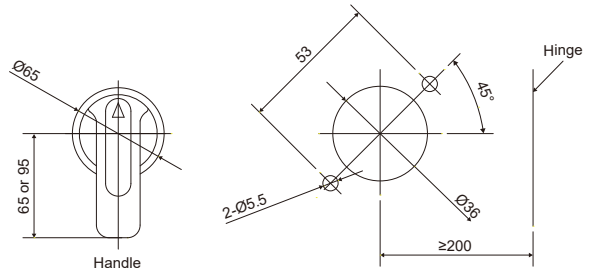
Extended Rotary Handle

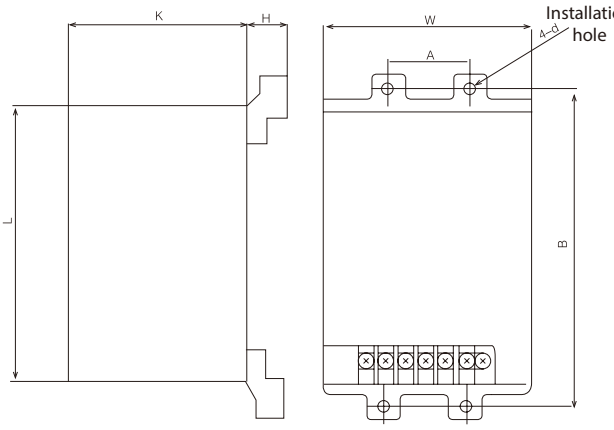
Type	Dimensions (mm)					Screw
	A	B	C	D	Y	
MA-100N	111	25	125	229	+8	M4x80
MA-100T	111	25	125	229	0	M4x75
MA-100L	111	25	125	229	0	M4x75
MA-125N	114	30	125	229	+8	M4x80
MA-250N	126	35	125	229	0	ST3x10
MA-250H	126	35	143	247	0	M4x50
MA-400N	221	44	190	290	+10	M5x50
MA-800N	242	70	190	290	+10	M6x125 &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

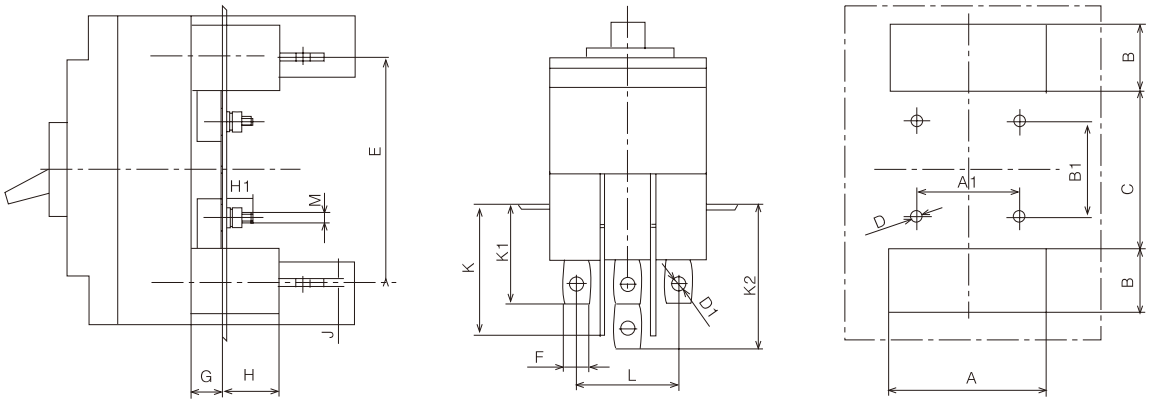






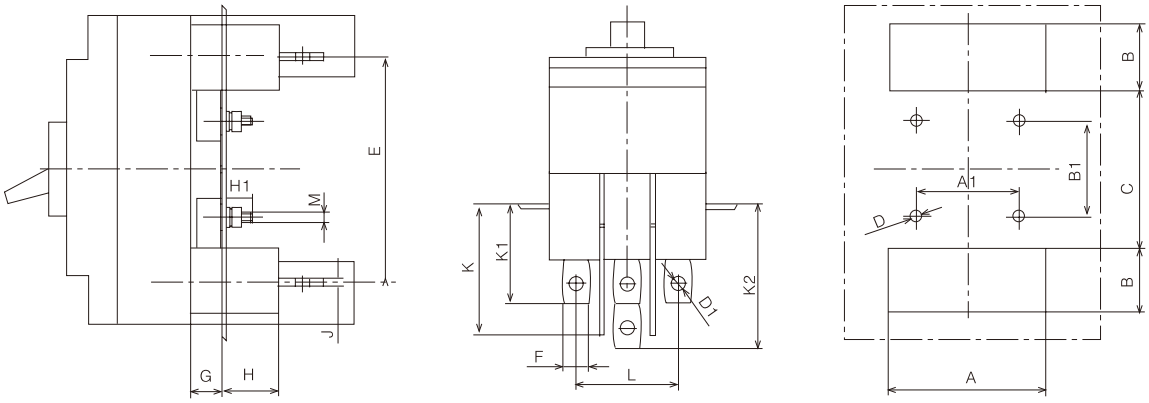
Rear Connection

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

(Controller voltage: AC 220V)

ATS (Automatic Transfer Switches)

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	250, 300, 350, 400.	50	35
BS400HN	3P, 4P		85	50
BS630SN	3P, 4P	500, 600, 630.	50	35
BS630HN	3P, 4P		85	50
BS800SN	3P, 4P	700, 800.	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.

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
Frequence (Hz)			50, 60	50, 60		50, 60
Rated voltage Ue (V)			AC 690	AC 690		AC 400, 415, 690
Rated impulse withstand vo ltage, 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 labled 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

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) / Rated voltage (V)	Standard	Mechanical life (times)
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

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

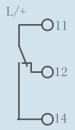
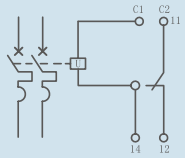
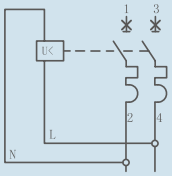
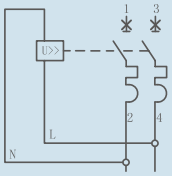
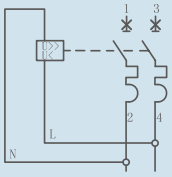
- Note: Rated residual current 10 is below 40A

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 VoltageTrip (UVT)	RU	AC230V U< 170V±5%	18	
Over Voltage Trip (OVT)	RO	AC230V U>280V±5%	18	
Over-under Voltage Trip (OUVT)	ROU	AC230V U<AC170V±5% U>AC280V±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℃~ +40℃

BHA

·Overload, Short circuit

BHA-B	3	2	C	50

Type	Rated short-circuit breaking capacity (kA) / Rated voltage (V)	Poles (P)	Tripping characteristics	Rated current In (A)	Standard	Mechanical life
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	125: 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) / Rated voltage (V)	Poles (P)	Tripping characteristics	Rated current In (A)	Residual current type	Rated sensitivity current (mA)	Optional function (2P)
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
	4: 10kA (@AC230/240V: 2P, AC400/415V: 3P, 4P)				A, AC B	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)** **Rated voltage (V)**	**Poles (P)**	**Tripping characteristics**	**Rated current In (A)**
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

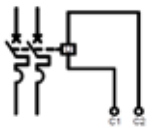
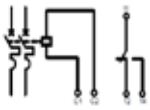
BHK

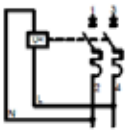
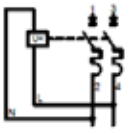
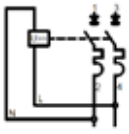
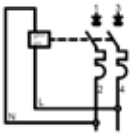
•Accessories

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 AC2 40V 6A DC 130V 1A DC 48V 2A DC2 4V 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:
1. If AL/AX/SHT/UVT are selected together, AL/AX can only be installed on the left side of SHT/UVT.
2. 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.
3. 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.
4. The BHA-B3S and BHL-B3S do not have optional accessories.

Surge Protective Device | BHP Series

BHP	20	–	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	≧ 2.5mm²	≧ 6mm²
					320		1.2				
BHP40	40: 40kA	8/20		R	275	230/400	1.3	8/20	20	≧ 4mm²	≧ 16mm²
					385		1.8				
BHP80	80: 80kA	8/20		R	275	230/400	1.8	8/20	40	≧ 10mm²	≧ 25mm²
					385		2.1				
BHP100	100: 100kA	8/20		R	275	230/400	2.1	8/20	60	≧ 16mm²	≧ 25mm²
					385		2.3				
BHP250	250: 25kA	10/350			275	230/400	2.3	10/350	-	≧ 25mm²	≧ 35mm²
					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 Us. 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 Uc(V) is below table. Max operation voltage Uc(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 Uc.
- Altitude: less than 2,000m.
- Use and storage temperature: -Normal range: -5℃ ~ +40℃;
  -Ultimate range: -40℃ ~ +80℃;
- Humidity: Relative humidity 30%~90% under ambient temperature.

SPD DISCONNECTOR (SSD) | BHD Series

BHD	20	–	R	1
↓	↓		↓	↓

Type	Imax /Iimp(kA)	Isc(kA)	Pole(P)
BHD	20: 20kA (8/20 µs) 40: 40kA (8/20 µs) 80: 80kA (8/20 µs) 120: 120kA (8/20 µs) *250: 25kA (10/350 µs)	R: 65kA U: 100kA	1: 1P 2: 2P 3: 3P 4: 4P

Note: *Iimp: 250: 25kA

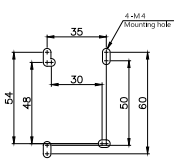
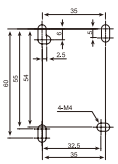
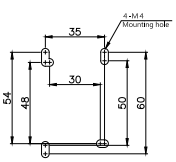
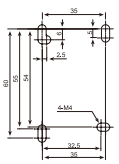
Technical Specifications

Model	BHD20	BHD40	BHD80	BHD120	BHD250
Number of Poles	1P, 2P, 3P, 4P				
Rated Operating Voltage Ue	AC 230/240 V (1P/2P), AC 230/400 V (3P/4P)				
Nominal discharge current In (kA)	10	20	40	60	80
Max. discharge current Imax (kA)	20	40	80	120	–
Max. Impulse Current Iimp (kA)	–	–	–	–	25
Short Circuit Current Isc (kA)	R: 65kA, U: 100kA				
Class	Class II (T2)				Class I (T1)
Applicable SPD	BHP20	BHP40	BHP80	BHP100	BHP250

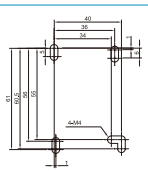
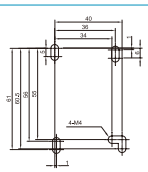
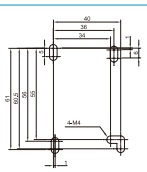
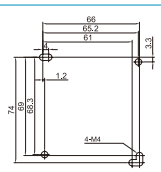
Operating Conditions

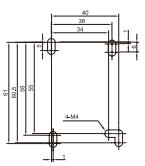
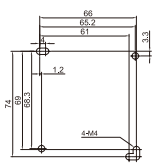
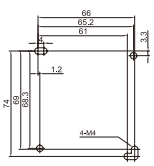
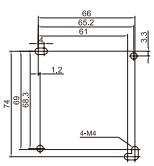
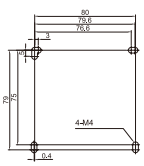
- Ambient Temperature: -25°C to +60°C
- Altitude: ≤ 2000 m
- Relative Humidity: 20% to 90%
- Pollution Degree: Class 3
- Vibration: Sinusoidal vibration (10 Hz to 50 Hz, amplitude 1.5 mm)

Magnetic Contactor / Motor Starter ◆ AC control

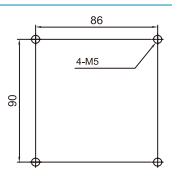
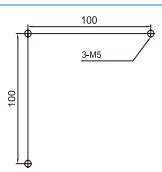
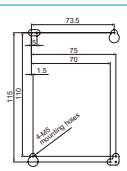
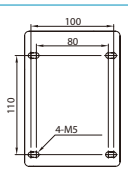
Model				9T	11	12T	15
Type	Magnetic Contactor	Nonreversing		S-P9T	S-P11	S-P12T	S-P15
		Reversing		S-2 x P9T	S-2 x P11	S-2 x P12T	S-2 x P15
	Motor Starter	without enclosure	Nonreversing	MSO-P9T	MSO-P11	MSO-P12T	MSO-P15
			Reversing	MSO-2 x P9T	MSO-2 x P11	MSO-2 x P12T	MSO-2 x P15
		with enclosure	Nonreversing	MS-P9T	MS-P11	MS-P12T	MS-P15
			Reversing	MS-2 x P9T	MS-2 x P11	MS-2 x P12T	MS-2 x P15
		with enclosure (push button)	Nonreversing	MS-P9TPB	MS-P11PB	MS-P12TPB	MS-P15PB
	TOR		Standard	TH-P12ES	TH-P12ES	TH-P12ES	TH-P12ES
			Differential	TH-P12ES PP	TH-P12ES PP	TH-P12ES PP	TH-P12ES PP
Rated Capacity	IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660 AC 3 (kW/HP/A)	3 ø	240V	2.5/3.5/11	3.5/4.5/13	3.5/4.5/13	4.5/6/18
			380/415V	4/5.5/9	5.5/7.5/12	5.5/7.5/12	7.5/10/16
			440V	4/5.5/9	5.5/7.5/12	5.5/7.5/12	7.5/10/16
			550V	4/5.5/7	5.5/7.5/9	7.5/10/12	7.5/10/13
			660V	4/5.5/6	5.5/7.5/7	7.5/10/9	7.5/10/9
		Operation current (Ith) AC1 (A)		25	20	25	25
		Rated insulation voltage (V)		AC690	AC660	AC690	AC660
	UL 508 CSA-C22.2 AC3 (HP/A)	1 ø	100~120V	0.5/9.8	0.5/9.8	0.75/13.8	—
			200~240V	2/10	2/10	2/12	—
		3 ø	200~240V	3/9.6	3/9.6	5/15.2	—
			380~480V	5/7.6	7.5/11	7.5/11	—
			550~600V	7.5/9	10/11	10/11	—
		Operation current (Ith) AC1 (A)		25	25	25	—
		Rated insulation voltage (V)		AC600	AC600	AC600	—
NEMA				—	0	—	0
Auxiliary Contact	Auxiliary Contact		Standard	1NO 1NC	1NO	1NO 1NC	1NO
			Special	—	1NC	—	1NC
	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, Q300	A600, Q300	A600, Q300	—
Performance	Electrical life (AC3) (10 thousand)			160	160	160	130
	Mechanical life (10 thousand)			1000	1000	1000	1000
	Operation (Time/Hour)			1200	1200	1200	1200
Magnetic Contactor	Weight (kg)			0.34	0.33	0.34	0.33
	Appearance Dimensions (W×H×D) (mm)			43x81x86	43x81x83.5	43x81x86	43x81x83.5
	Installation Dimension (mm)						
Mechanical Interlock				MPU-11	MPU-11	MPU-11	MPU-11

Magnetic Contactor / Motor Starter ◆ AC control

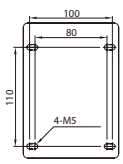
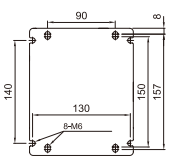
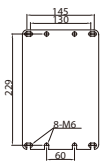
Model				16	21 (A)	25	30T
Type	Magnetic Contactor	Nonreversing		S-P16	S-P21 (A)	S-P25	S-P30T
		Reversing		S-2 x P16	S-2 x P21 (A)	S-2 x P25	S-2 x P30T
	Motor Starter	without enclosure	Nonreversing	MSO-P16	MSO-P21	MSO-P25	MSO-P30T
			Reversing	MSO-2 x P16	MSO-2 x P21 (A)	MSO-2 x P25	MSO-2 x P30T
		with 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 ø	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 ø	100~120V	1/16	2/24	2/24	-
			200~240V	3/17	3/17	3/17	-
		3 ø	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

32T	**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	MSO-2 x P50T	MSO-2 x P60T
MS-P32T	MS-P35T	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
-	5/28	-	7.5/40	10/50	10/50
-	10/28	-	15/42	20/54	20/54
-	20/27	-	20/27	30/40	40/52
-	30/32	-	30/32	40/41	50/52
50	50	-	60	115	115
AC600	AC600	-	AC600	AC600	AC600
1	2	2	2	2	2
1NO 1NC	2NO 2NC	2NO 2NC	2NO 2NC	2NO 2NC	2NO 2NC
-	-	-	-	-	-
1.6	1.6	1.6	1.6	1.6	1.6
0.95	0.95	0.95	0.95	0.95	0.95
16	16	16	16	16	16
A600,Q300	A600,Q300	A600,Q300	A600,Q300	A600,Q300	A600,Q300
130	130	130	130	130	130
1000	1000	1000	1000	600	600
1200	1200	1200	1200	1200	1200
0.38	0.55	0.55	0.55	1.05	1.05
53.5x81x83.5	73x95x93	73x95x93	73x95x93	87.9x115x107	87.9x115x107
					
MPU-21	MPU-11	MPU-11	MPU-11	MPU-11	MPU-11

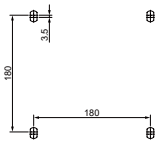
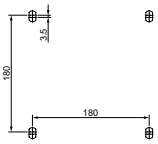
Magnetic Contactor / Motor Starter ◆ AC control

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-2×P100E	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-2×E100	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-2×E100	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 AC 3 (kW/HP/A)	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
		Operation current (Ith) AC1 (A)		115	150	135	170
		Rated insulation voltage (V)		AC660	AC660	AC690	AC660
	UL 508 CSA-C22.2 AC3 (HP/A)	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
		Operation current (Ith) AC1 (A)		115	150	-	170
		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	85×125×127	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

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

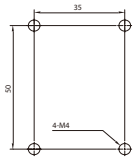
Magnetic Contactor / Motor Starter ◆ AC control

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 ø	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 ø	100~120V	-	-	-
			200~240V	-	-	-
		3 ø	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.

Magnetic Contactor / Motor Starter ◆ AC control

Mini Contactor

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 AC 3 (kW/HP/A)	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
		Continuous Current (Ith) AC1 (A)		20	20
		Rated insulation voltage (V)		AC690	AC690
	UL 508 CSA-C22.2 AC3 (HP/A)	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
		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 AC 15	Contact	Standard	1NO	1NO
			Special	1NC	1NC
			220V	3.3	3.3
			380V	1.9	1.9
		Continuous Current (Ith) AC1 (A)		10	10
		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				-	-

Thermal Overload Relay

Type		09
Standard	Contactor Assembled Type	-
	Independently Installed Type	-
With phase failure protection	Contactor Assembled Type	TH-P09PP
	Independently Installed Type	-
Reset Mode		Manual / Automatic
Magnetic Contactor		S-P06, S-P09.

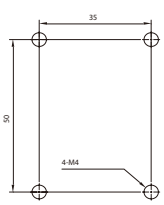
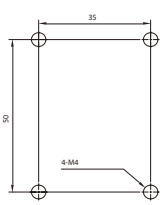
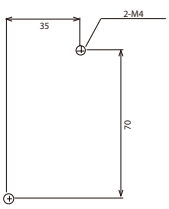
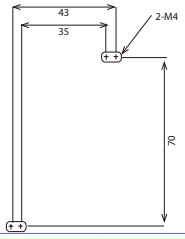
TOR Adjustment Range (A)	Rating (A)	Range (A)
	0.13	0.1~0.16
	0.20	0.16~0.24
	0.32	0.24~0.4
	0.5	0.4~0.6
	0.8	0.6~1
	1.3	1~1.6
	2.0	1.6~2.4
	3.2	2.4~4
	5	4~6
	7.5	6~9

Auxiliary Contact	1NO 1NC
Weight	0.075
Dimensions (mm) (W×H×D)	45.5×64.8×50

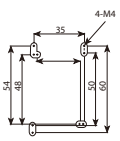
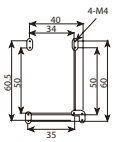
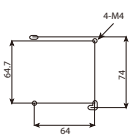
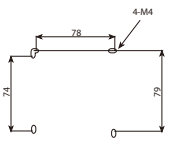
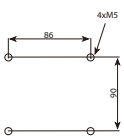
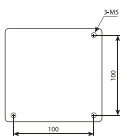
Coil Specification Table

◆ S-P06, S-P09						
Description	AC12V	AC24V	AC48V	AC110V	AC120V	AC220V
Coil rated specifications marking	12V 50Hz 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

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 AC 3 (kW/HP/A)	3 ø	240V		1.5 / 2/ 6	2.2 / 3 / 9	3.5 / 4.5 / 13	4.5 / 6 / 18	5.5 / 7.5 / 24
			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
		Continuous Current (Ith)		AC1 (A)	20	20	20	30	32
		Rated insulation voltage		(Ui)	690	690	660	660	660
	UL 508 CSA-C22.2 AC3 (HP/A)	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
		Continuous Current (Ith)		AC1 (A)	20	20	24	30	35
		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
Performanc	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	690
Rated Capacity	IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660 AC 3 (kW/HP/A)	AC-6b 3 ø (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	100 / 30	600/20
Operation Frequency			(time/ hour)	240	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

Thermal Overload Relay

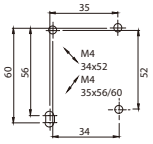
Type		12	18	20	
Standard	Contactor Assembled Type	TH-P12ES	TH-P18E	TH-P20ES	TH-P20ES TA
#3	Separate Installed Type	Install UATP12	TH-P18ER	-	-
Differential type	Contactor Assembled Type	TH-P12ES PP	TH-P18PP	TH-P20ES PP	TH-P20ES TAPP
#3	Separate Installed Type	Install UATP12	TH-P18PPR	-	-
Reset Mode		Manual / Automatic	Manual / Automatic	Manual / Automatic	
Magnetic Contactor		S-P09T, S-P11, S-P12T, S-P15.	S-P16, S-P21	S-P16, S-P21, S-P25, S-P30T, S-P32T, S-P35T, S-P38T, S-P40T.	S-P25, S-P30T, S-P32T, S-P35T, S-P38T, S-P40T.

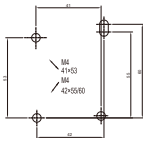
TOR Adjustment Range (A)							
Rating (A)	Range (A)	Rating	Range	Rating (A)	Range (A)	Rating (A)	Range (A)
0.25	0.19~0.31	0.25	0.19 - 0.31	0.25	0.19~0.31	28	22~34
0.4	0.3~0.5	0.4	0.3 - 0.5	0.4	0.3~0.5	33	28~38
0.6	0.45~0.75	0.6	0.45 - 0.75	0.6	0.45~0.75	40	32~48
0.9	0.7~1.1	0.9	0.7-1.1	0.9	0.7~1.1		
1.2	0.9~1.5	1.2	0.9-1.5	1.2	0.9~1.5		
1.7	1.3~2.1	1.7	1.3-2.1	1.7	1.3~2.1		
2.1	1.6~2.6	2.1	1.6-2.6	2.1	1.6~2.6		
3.3	2.5~4.1	3.3	2.5-4.1	3.3	2.5~4.1		
4.4	3.4~5.4	4.4	3.4-5.4	4.4	3.4~5.4		
6.5	5~8	6.5	5 - 8	6.5	5~8		
9	7~11	9	7-11	9	7~11		
11	9~13	11	9-13	11	9~13		
*15	12~18	15	12-18	15	12~18		
		21	17-24	21	17~24		

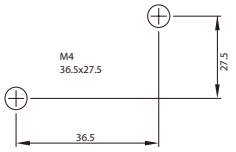
Auxiliary Contact	1NO 1NC	1NO 1NC	1NO 1NC	
Weight	0.11/ 0.12	0.15	0.18/ 0.19	0.20/ 0.21
Appearance Dimensions (W×H×D)	TH-P12ES PP: 45.5×55.5×78 TH-P12ES PP: 47×71×86.2	53.5×55.5×78.5	TH-P12ES PP: 64.5×46.1×80	TH-P12ES TAPP: 64.5×56.2×80

Installation Dimensions (mm)

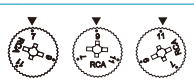
TH-P12ES PP:
TH-P12(PP)R:

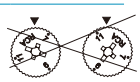




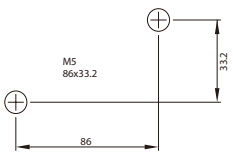


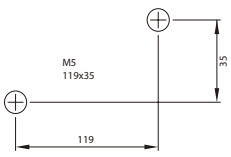
Note. 1. The purpose of using TOR is protecting load tripping. For protecting circuit, please choose circuit breaker.
2. When adjusting the rated current; please refer to the TOR range table above. Do not exceed its range.
3. (E): 3 Elements
4. *: The rating current of TH-P12 can only use up to "11A" when combined with S-P11.

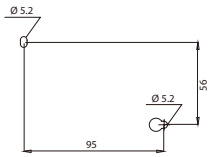

Correct

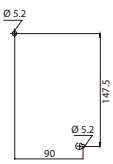

Incorrect

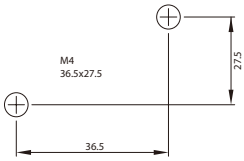
60				120				220T		400T		600CT	
TH-P60ES		TH-P60ES TA		TH-P120E		TH-P120ETA		TH-P220TE		TH-P400TE		TH-P600CTE	
TH-P60PP		TH-P60ES TAPP		TH-P120PP		TH-P120TAPP		TH-P220TPP		TH-P400TPP		TH-P600CTPP	
Manual / Automatic				Manual / Automatic				Manual / Automatic		Manual / Automatic		Manual / Automatic	
S-P50T, S-P60T, S-P80T.		S-P60T, S-P80T.		S-P100T, S-P125T, S-P150T.				S-P200T, S-P220T.		S-P300T, S-P400T.		S-P630T, S-P800T.	
Rated (A)	Adjustable Range (A)	Rated (A)	Adjustable Range (A)	Rated (A)	Adjustable Range (A)	Rated (A)	Adjustable Range (A)	Rated (A)	Adjustable Range (A)	Rated (A)	Adjustable Range (A)	Rated (A)	Adjustable Range (A)
11	9~13	67	54~80	40	32~48	105	80~130	80	60~100	105	80~130	260	200~320
15	12~18	80	60~100	54	43~65	130	100~160	105	80~130	130	100~160	350	260~440
21	17~24			67	54~80	160	120~200	130	100~160	160	120~200	500	400~600
28	22~34			80	60~100			160	120~200	200	150~250		
33	28~38							200	150~250	260	200~320		
40	32~48									350	260~440		
54	43~65												
1NO 1NC				1NO 1NC				1NO 1NC		1NO 1NC		1NO 1NC	
0.28/ 0.30		0.34/ 0.36		0.55		0.76		2.25		2.65		3.93/ 3.95	
TH-P60ES PP: 98×50.5×78		TH-P60ES TAPP: 64.5×65.5×80		TH-P120(PP): 133×54×105		TH-P120TA(PP): 133×85.5×105		140×151.5×158.7		164×165×163.7		TOR: 64.5×46.1×80 TOR W/CT: 106×46.8×104.5	











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

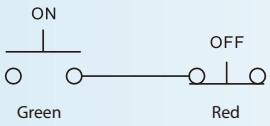
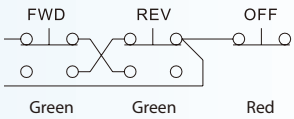
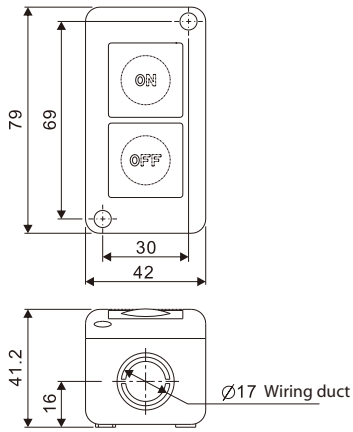
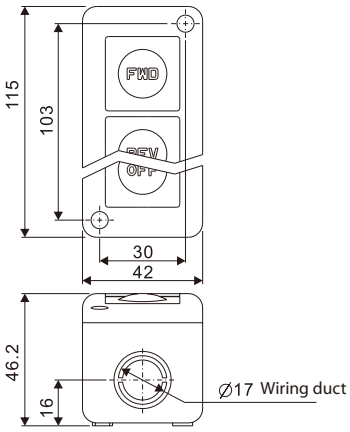
Definite Purpose Magnetic Contactor | SF Series

Type		20	25	30	35	40
Type		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-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

Type	UATP12
TOR	TH-P12

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	S-P06, S-P09
0.04	(1/19)	0.32A	0.24~0.4A	S-P06, S-P09
0.09	(1/8)	0.5A	0.4~0.6A	S-P06, S-P09
0.12	(1/6)	0.8A	0.6~1.0A	S-P06, S-P09
0.25	(1/3)	1.3A	1.0~1.6A	S-P06, S-P09
0.37	(1/2)	2.0A	1.6~2.4A	S-P06, S-P09
0.75	(1)	3.2A	2.4~4.0A	S-P06, S-P09
1.1	(1 1/2)	5A	4.0~6.0A	S-P09
1.5	(2)	7.5A	6.0~9.0A	S-P9T, S-P11, S-P12T, S-P15, S-P16
0.03	(1/25)	0.25A	0.19~0.31A	S-P9T, S-P11, S-P12T, S-P15, S-P16
0.05	(1/15)	0.4A	0.3~0.5A	S-P9T, S-P11, S-P12T, S-P15, S-P16
0.1	(1/8)	0.6A	0.45~0.75A	S-P9T, S-P11, S-P12T, S-P15, S-P16
0.15	(1/5)	0.9A	0.7~1.1A	S-P9T, S-P11, S-P12T, S-P15, S-P16
0.2	(1/4)	1.2A	0.9~1.5A	S-P9T, S-P11, S-P12T, S-P15, S-P16
0.3	(2/5)	1.7A	1.3~2.1A	S-P9T, S-P11, S-P12T, S-P15, S-P16
0.4	(1/2)	2.1A	1.6~2.6A	S-P9T, S-P11, S-P12T, S-P15, S-P16
0.75	(1)	3.3A	2.5~4.1A	S-P9T, S-P11, S-P12T, S-P15, S-P16
1.1	(1 1/2)	4.4A	3.4~5.4A	S-P9T, S-P11, S-P12T, S-P15, S-P16
1.5	(2)	6.5A	5~8A	S-P9T, S-P11, S-P12T, S-P15, S-P16
2.2	(3)	9A	7~11A	S-P9T, S-P11, S-P12T, S-P15, S-P16
3	(4)	11A	9~13A	S-P9T, S-P11, S-P12T, S-P15, S-P16
3.7	(5)	15A	12~18A	S-P15, S-P16
5.5	(7 1/2)	21A	17~24A	S-P21
6.5	(8 1/2)	28A	22~34A	S-P25
7.5	(10)			S-P30T, S-P32T
9	(12 1/2)	33A	28~38A	S-P35T, S-P38T
11	(15)	40A	32~48A	S-P40T
15	(20)	54A	43~65A	S-P50T
19	(25)	67A	54~80A	S-P60T
22	(30)	80A	60~100A	S-P80T
25	(35)	105A	80~130A	S-P100T
30	(40)			S-P125T
37	(50)	130A	100~160A	S-P150T
45	(60)	160A	120~200A	S-P200T
55	(75)	200A	150~250A	S-P220T
65	(85)			S-P300T
75	(100)	260A	200~320A	S-P400T
90	(125)	350A	260~440A	M-600C
110	(150)			M-600C
132	(180)	500A	400~600A	M-600C
160	(220)			M-600C

Selection Table ◆ Direct On-Line Starter

Motor rated capacity kW (HP)		3 ø 380V~440V		
		Heating element rating (A)		Selection of the contactor
0.025	(1/30)	0.13A	0.1~0.16A	S-P06, S-P09
0.04	(1/19)	0.2A	0.16~0.24A	S-P06, S-P09
0.09	(1/8)	0.32A	0.24~0.4A	S-P06, S-P09
0.18	(1/4)	0.5A	0.4~0.6A	S-P06, S-P09
0.25	(1/3)	0.8A	0.6~1.0A	S-P06, S-P09
0.37	(1/2)	1.3A	1.0~1.6A	S-P06, S-P09
0.55	(3/4)	2.0A	1.6~2.4A	S-P06, S-P09
0.75	(1)			S-P06, S-P09
1.1	(1 1/2)	3.2A	2.4~4.0A	S-P06, S-P09
1.5	(2)	5A	4.0~6.0A	S-P06, S-P09
2.2	(3)			S-P06, S-P09
3	(4)	7.5A	6.0~9.0A	S-P09
0.05	(1/15)	0.25A	0.19~0.31A	S-P9T, S-P11, S-P12T, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P32T, S-P35T, S-P38T, S-P40T
0.1	(1/8)	0.4A	0.3~0.5A	S-P9T, S-P11, S-P12T, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P32T, S-P35T, S-P38T, S-P40T
0.2	(1/4)	0.6A	0.45~0.75A	S-P9T, S-P11, S-P12T, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P32T, S-P35T, S-P38T, S-P40T
0.3	(2/5)	0.9A	0.7~1.1A	S-P9T, S-P11, S-P12T, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P32T, S-P35T, S-P38T, S-P40T
0.4	(1/2)	1.2A	0.9~1.5A	S-P9T, S-P11, S-P12T, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P32T, S-P35T, S-P38T, S-P40T
0.75	(1)	1.7A	1.3~2.1A	S-P9T, S-P11, S-P12T, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P32T, S-P35T, S-P38T, S-P40T
1.1	(1 1/2)	2.1A	1.6~2.6A	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)	3.3A	2.5~4.1A	S-P9T, S-P11, S-P12T, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P32T, S-P35T, S-P38T, S-P40T
2.2	(3)	4.4A	3.4~5.4A	S-P9T, S-P11, S-P12T, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P32T, S-P35T, S-P38T, S-P40T
3	(4)	6.5A	5~8A	S-P9T, S-P11, S-P12T, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P32T, S-P35T, S-P38T, S-P40T
3.7	(5)	9A	7~11A	S-P9T, S-P11, S-P12T, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P32T, S-P35T, S-P38T, S-P40T
4	(5 1/2)			S-P9T, S-P11, S-P12T, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P32T, S-P35T, S-P38T, S-P40T
4.5	(6)	11A	9~13A	S-P15, S-P16, S-P21, S-P25, S-P30T, S-P32T, S-P35T, S-P38T, S-P40T, S-P50T, S-P60T, S-P80T
5.5	(7 1/2)			S-P15, S-P16, S-P21, S-P25, S-P30T, S-P32T, S-P35T, S-P38T, S-P40T, S-P50T, S-P60T, S-P80T
7.5	(10)	15A	12~18A	S-P21, S-P25, S-P30T, S-P32T, S-P35T, S-P38T, S-P40T, S-P50T, S-P60T, S-P80T
11	(15)	21A	17~24A	S-P21, S-P25, S-P30T, S-P32T, S-P35T, S-P38T, S-P40T, S-P50T, S-P60T, S-P80T
12	(16)			S-P25, S-P30T, S-P32T, S-P35T, S-P38T, S-P40T, S-P50T, S-P60T, S-P80T
15	(20)	28A	22~34A	S-P30T, S-P32T, S-P35T, S-P38T, S-P40T, S-P50T, S-P60T, S-P80T
19	(25)	33A	28~38A	S-P40T, S-P50T, S-P60T, S-P80T
22	(30)	40A	32~48A	S-P40T, S-P50T, S-P60T, S-P80T
25	(35)			S-P50T, S-P60T, S-P80T, S-P100T, S-P125T, S-P150T
30	(40)	54A	43~65A	S-P50T, S-P60T, S-P80T, S-P100T, S-P125T, S-P150T
37	(50)	67A	54~80A	S-P60T, S-P80T, S-P100T, S-P125T, S-P150T
45	(60)			S-P80T, S-P100T, S-P125T, S-P150T
50	(70)	80A	60~100A	S-P80T, S-P100T, S-P125T, S-P150T, S-P200T, S-P220T
60	(80)	105A	80~130A	S-P100T, S-P125T, S-P150T, S-P200T, S-P220T, S-P300T, S-P400T
75	(100)	130A	100~160A	S-P125T, S-P150T, S-P200T, S-P220T, S-P300T, S-P400T
90	(125)	160A	120~200A	S-P150T, S-P200T, S-P220T, S-P300T, S-P400T
110	(150)	200A	150~250A	S-P200T, S-P220T, S-P300T, S-P400T
132	(180)			S-P300T, S-P400T
150	(200)	260A	200~320A	S-P300T, S-P400T, M-600C
160	(220)	350A	260~440A	S-P300T, S-P400T, M-600C
220	(330)			S-P400T, M-600C
250	(350)	500A	400~600A	M-600C
315	(420)			M-600C

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ACB
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Selection Table ◆ Direct On-Line Starter

Motor rated capacity kW	(HP)	3 ø 500V~550V Heating element rating (A)		Selection of the contactor
0.06	(1/12)	0.13A	0.1~0.16A	S-P06; S-P09
0.09	(1/8)	0.2A	0.16~0.24A	S-P06; S-P09
0.12	(1/6)	0.32A	0.24~0.4A	S-P06; S-P09
0.18	(1/4)	0.5A	0.4~0.6A	S-P06; S-P09
0.37	(1/2)	0.8A	0.6~1.0A	S-P06; S-P09
0.55	(3/4)	1.3A	1.0~1.6A	S-P06; S-P09
0.75	(1)	2.0A	1.6~2.4A	S-P06; S-P09
1.1	(1 1/2)			S-P06; S-P09
1.5	(2)	3.2A	2.4~4.0A	S-P06; S-P09
2.2	(3)	5A	4.0~6.0A	S-P06; S-P09
3	(4)			S-P06; S-P09
4	(5 1/2)	7.5A	6.0~9.0A	S-P09
0.12	(1/6)	0.25A	0.19~0.31A	S-P9T, S-P11, S-P12T; S-P15, S-P16; S-P21; S-P25; S-P30T, S-P32T; S-P35T, S-P38T; S-P40T
0.18	(1/4)	0.4A	0.3~0.5A	S-P9T, S-P11, S-P12T; S-P15, S-P16; S-P21; S-P25; S-P30T, S-P32T; S-P35T, S-P38T; S-P40T
0.25	(1/3)	0.6A	0.45~0.75A	S-P9T, S-P11, S-P12T; S-P15, S-P16; S-P21; S-P25; S-P30T, S-P32T; S-P35T, S-P38T; S-P40T
0.37	(1/2)	0.9A	0.7~1.1A	S-P9T, S-P11, S-P12T; S-P15, S-P16; S-P21; S-P25; S-P30T, S-P32T; S-P35T, S-P38T; S-P40T
0.55	(3/4)	1.2A	0.9~1.5A	S-P9T, S-P11, S-P12T; S-P15, S-P16; S-P21; S-P25; S-P30T, S-P32T; S-P35T, S-P38T; S-P40T
0.75	(1)	1.7A	1.3~2.1A	S-P9T, S-P11, S-P12T; S-P15, S-P16; S-P21; S-P25; S-P30T, S-P32T; S-P35T, S-P38T; S-P40T
1.1	(1 1/2)	2.1A	1.6~2.6A	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)	3.3A	2.5~4.1A	S-P9T, S-P11, S-P12T; S-P15, S-P16; S-P21; S-P25; S-P30T, S-P32T; S-P35T, S-P38T; S-P40T
2.2	(3)	4.4A	3.4~5.4A	S-P9T, S-P11, S-P12T; S-P15, S-P16; S-P21; S-P25; S-P30T, S-P32T; S-P35T, S-P38T; S-P40T
4	(5 1/2)	6.5A	5~8A	S-P9T, S-P11, S-P12T; S-P15, S-P16; S-P21; S-P25; S-P30T, S-P32T; S-P35T, S-P38T; S-P40T
4.5	(6)	9A	7~11A	S-P15, S-P16; S-P21; S-P25; S-P30T, S-P32T; S-P35T, S-P38T; S-P40T; S-P50T; S-P60T; S-P80T
5.5	(7 1/2)	11A	9~13A	S-P15, S-P16; S-P21; S-P25; S-P30T, S-P32T; S-P35T, S-P38T; S-P40T; S-P50T; S-P60T; S-P80T
7.5	(10)			S-P21; S-P25; S-P30T, S-P32T; S-P35T, S-P38T; S-P40T; S-P50T; S-P60T; S-P80T
11	(15)	15A	12~18A	S-P21; S-P25; S-P30T, S-P32T; S-P35T, S-P38T; S-P40T; S-P50T; S-P60T; S-P80T
12	(16)	21A	17~24A	S-P25; S-P30T, S-P32T; S-P35T, S-P38T; S-P40T; S-P50T; S-P60T; S-P80T
15	(20)			S-P30T, S-P32T; S-P35T, S-P38T; S-P40T; S-P50T; S-P60T; S-P80T
19	(25)	28A	22~34A	S-P40T; S-P50T; S-P60T; S-P80T
22	(30)	33A	28~38A	S-P40T; S-P50T; S-P60T; S-P80T; S-P100T; S-P125T; S-P150T
30	(40)	40A	32~48A	S-P50T; S-P60T; S-P80T; S-P100T; S-P125T; S-P150T
37	(50)	54A	43~65A	S-P60T; S-P80T; S-P100T; S-P125T; S-P150T
45	(60)	67A	54~80A	S-P80T; S-P100T; S-P125T; S-P150T
50	(70)			S-P100T; S-P125T; S-P150T; S-P200T; S-P220T
60	(80)	80A	60~100A	S-P100T; S-P125T; S-P150T; S-P200T; S-P220T; S-P300T; S-P400T
75	(100)	105A	80~130A	S-P125T; S-P150T; S-P200T; S-P220T; S-P300T; S-P400T
90	(125)	130A	100~160A	S-P150T; S-P200T; S-P220T; S-P300T; S-P400T
110	(150)	160A	120~200A	S-P200T; S-P220T; S-P300T; S-P400T
132	(180)			S-P220T; S-P300T; S-P400T
150	(200)	200A	150~250A	S-P300T; S-P400T; M-600C
160	(220)	260A	200~320A	S-P300T; S-P400T; M-600C
220	(330)	350A	260~440A	S-P400T; M-600C
315	(420)	500A	400~600A	M-600C

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)			TH-P60	TH-P60	TH-P60	TH-P60												
15	3.7	(5)	7.5	(10)																		
15	4.5	(6)	10	(13)																		
21	5.5	(7 1/2)	11	(15)																		
28	6.5	(8)	14	(19)	TH-P20TA	TH-P20TA																
28	7.5	(10)	15	(20)																		
33	9	(12 1/2)	19	(25)																		
40	11	(15)	22	(30)							TH-P120	TH-P120	TH-P120	TH-P120	TH-P120	TH-P120						
40	14	(19)	26	(35)																		
54	15	(20)	30	(40)																		
67	19	(25)	37	(50)			TH-P60TA		TH-P60TA	TH-P60TA												
80	22	(30)	45	(60)													TH-P220T	TH-P220T	TH-P220T	TH-P220T	TH-P400T	TH-P400T
80	25	(34)	50	(67)																		
105	30	(40)	55	(75)							TH-P120TA	TH-P120TA	TH-P120TA	TH-P120TA	TH-P120TA	TH-P120TA						
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)															TH-P400T			
350	110	(150)	200	(260)																		

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							

Accessory

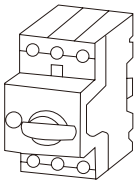
·Side mount auxiliary contacts

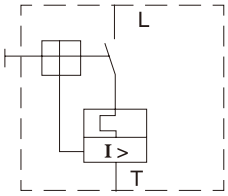
Model	Contacts	Voltage
smAX11	1NO1NC	500V

·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)

AL (MR-AM)
(For Magnetic Trip)

AL (MR-AD)
(For Overload Trip)

Front AX (MR-AE)

MMS

SHT (MR-AS)

UVT (MR-AU)

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Breaker & Switchgear System

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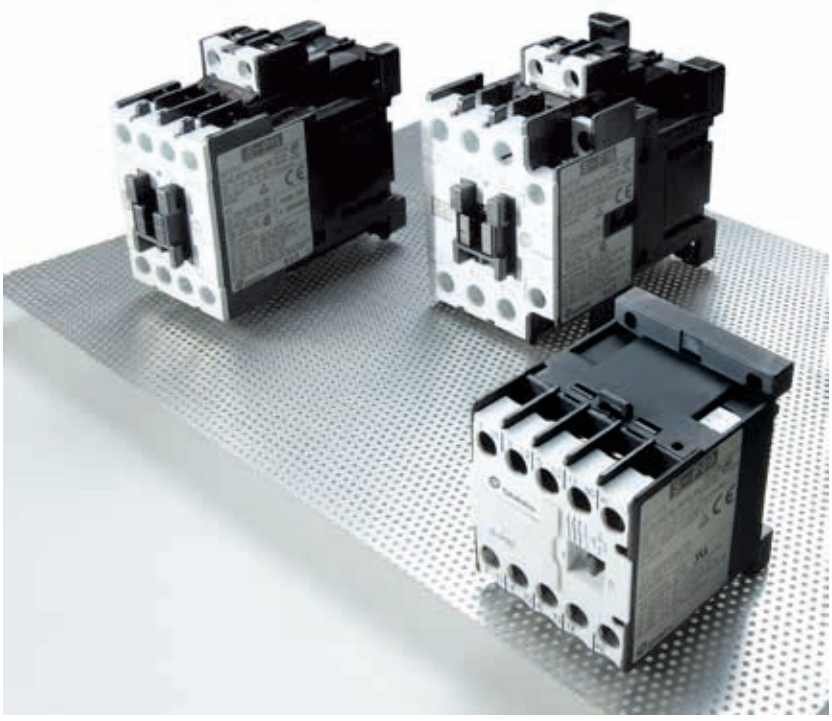
AUTOMATIC TRANSFER SWITCHES



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