

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



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MCCB
ELCB

ATS

ACB

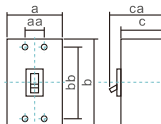
MCB

SPD

MS

MMS

Molded Case Circuit Breaker

Frame size (AF) (Inm)			30				50		60										
Type			BM30-CN		BM30-SN		BM50-CN		BM60-SN			BM60-HN			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, 25, 30, 40, 50, 60.			10, 15, 20, 25, 30, 40, 50, 60.			10, 15, 20, 30, 40, 50, 60.				
Number of poles (P)			2	3	2	3	2	3	2	3	4	2	3	4	3				
Rated insulation voltage Ui (V)			AC		690		690		690		690			690			690		
			DC		—		—		—		—			—			—		
Dimensions  (mm)			a	45	67.5	50	75	50	75	50	75	100	50	75	100	90			
			b	96		130		130		130			130			155			
			c	52		68		68		68			68			68			
			ca	67		90		90		90			90			90			
			bb	84		111		111		111			111			132			
			aa	23.5		25		25		25			25			30			
Weight (kg)			0.3	0.4	0.45	0.65	0.45	0.65	0.45	0.65	0.85	0.45	0.65	0.85	1.3				
Rated breaking capacity (kA)			IEC 60947-2 EN 60947-2 Icu AC		500V	—		1.5		1.5		5			5			15	
					440V	—		2.5		2.5		7.5			10			25	
					380V	1.5		2.5		2.5		7.5			15			30	
					220V(240V)	2.5		5		5		10			25			50	
			DC		250V	—		—		—		—			—			—	
					125V	—		—		—		—			—			—	
Connection			Clamp terminal		Clamp terminal		Clamp terminal		Clamp terminal			Clamp terminal			Clamp terminal				
Optional accessories			Alarm switch (AL)		—		○		○		○			○			○		
			Auxiliary switch (AX)		—		○		○		○			○			○		
			Shunt trip (SHT)		—		○		○		○			○			○		
			Under-voltage trip (UVT)		—		○		○		○			○			○		
			Rotary handle (EH)		—		●		●		●			●			●		
			Terminal cover (TC)		●		●		●		●			●			●		
Trip Unit			Hydraulic magnetic		Hydraulic magnetic		Hydraulic magnetic		Hydraulic magnetic			Hydraulic magnetic			Hydraulic magnetic				
Tripping button			—		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.

80% ~ 100% Adj. (A)

100

BM100-FTD



BM100-MN



BM100-SN



BM100-HN



BM100-HBN



BM100-H


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.

40, 50, 63, 80, 100.

15, 20, 30, 40, 50,
60, 75, 100.

1

2

3

2

3

2

3

4

3

4

3

4

690

690

690

690

690

690

—

—

250

—

—

—

—

25.4

50

75

50

75

60

90

120

105

140

105

140

130

130

130

155

165

165

60

68

68

68

68

86

91

90

90

90

92

112

111

111

111

132

126

126

—

25

25

30

35

35

0.29

0.45

0.65

0.45

0.65

0.9

1.3

1.6

1.5

1.9

2.1

2.6

—

5

5

15

20

25

—

7.5

10

25

32

42

5*

10

15

30

36

50

25

15

25

50

85

85

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—

10

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15

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Clamp terminal

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Thermal magnetic

Hydraulic magnetic

Hydraulic magnetic

Hydraulic magnetic

Adj. thermal
Fixed magnetic

Thermal magnetic

Equipped

Equipped

Equipped

Equipped

Equipped

Equipped

Note : Breaking Capacity of BM100-FTD is 5kA at 380V/415V/440V

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MCCB
ELCB

ATS

ACB

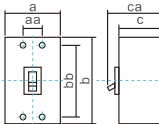
MCB

SPD

MS

MMS

Molded Case Circuit Breaker

Frame size (AF) (Inm)			100									125												
Type			BM100-HC		BM100-HS		BM100-BTD			BM100-STD			BM125-SN			BM125-HN			BM125-LTD					
Appearance																								
Rated current In (A) at ambient temp. 40°C			40, 50, 63, 80, 100.		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, 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					
Number of poles (P)			3	4	3	4	2	3	4	2	3	4	2	3	4	2	3	4	2	3	4			
Rated insulation voltage Ui (V)			AC		690		690		690			690			690			690			690			
			DC		—		—		—			—			—			—			—			
Dimensions		(mm)	a	105	140	105	140	50	75	100	50	75	100	60	90	120	60	90	120	50	75	100		
			b	165		165		130			130			155			155			130				
			c	86		86		68			68			68			68			68				
			ca	112		112		90			90			90			90			90				
			bb	126		126		111			111			132			132			111				
			aa	35		35		25			25			30			30			25				
Weight (kg)			2.1	2.6	2.1	2.6	0.5	0.7	0.9	0.5	0.7	0.9	0	30	30	0	30	30	0.5	0.7	0.9			
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 Icu AC	500V	42		50		7.5			10			7.5			15			15					
		440V	55		70		10			25			15			25			25					
		380V	70		85		15			30			22			30			36					
		220V(240V)	100		125		25			50			30			50			50					
	DC	250V	—		—		—			—			—			—			—					
		125V	—		—		—			—			—			—			—					
Connection			Clamp terminal		Clamp terminal		Clamp terminal			Clamp terminal			Clamp terminal			Clamp terminal			Clamp terminal					
Optional accessories	Alarm switch	(AL)	○		○		●			●			○			○			●					
	Auxiliary switch	(AX)	○		○		●			●			○			○			●					
	Shunt trip	(SHT)	○		○		●			●			○			○			●					
	Under-voltage trip	(UVT)	—		—		●			●			—			○			○			●		
	Rotary handle	(EH)	●		●		●			●			●			●			●					
	Terminal cover	(TC)	●		●		●			●			●			●			●					
Trip Unit			Thermal magnetic		Thermal magnetic		Thermal magnetic			Thermal magnetic			Hydraulic magnetic			Hydraulic magnetic			Thermal magnetic					
Tripping button			Equipped		Equipped		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.

80% ~ 100% Adj. (A)

80% ~ 100% Adj. (A)

160

250

BM160-SN

BM160-HN

BM160-HB

BM160-HC

BM160-HS

BM250-CN

BM250-SN



125, 140, 160.

125, 140, 160.

125, 140, 160.

125, 140, 160.

125, 140, 160.

125, 150, 175,
200, 225, 250.125, 150, 175,
200, 225, 250.

2 3 4

3 4

3 4

3 4

3 4

2 3 4

3 4

690

690

690

690

690

690

690

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250

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105 105 140

105 140

105 140

105 140

105 140

105 105 140

105 140

165

165

165

165

165

165

165

68

68

86

86

86

68

68

92

92

112

112

112

92

92

126

126

126

126

126

126

126

35

35

35

35

35

35

35

1.3 1.5 1.9

1.5 1.9

2.1 2.6

2.1 2.6

2.1 2.6

1.3 1.5 1.9

1.5 1.9

15

20

25

42

50

7.5

15

25

32

42

55

70

15

25

30

36

50

70

85

22

30

50

85

85

100

125

30

50

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Adj. thermal
Fixed magneticAdj. thermal
Fixed magnetic

Thermal magnetic

Thermal magnetic

Thermal magnetic

Adj. thermal
Fixed magneticAdj. thermal
Fixed magnetic

Equipped

Equipped

Equipped

Equipped

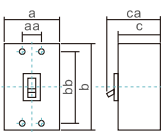
Equipped

Equipped

Equipped

Molded Case Circuit Breaker

80% ~ 100% Adj. (A)

Frame size (AF) (Inm)			250								400			
Type			BM250-HN		BM250-HB		BM250-HC		BM250-HS		BM400-CN			
Appearance														
Rated current In (A) at ambient temp. 40°C			175, 200, 225, 250.		100, 125, 150, 160, 175, 200, 225, 250.		175, 200, 225, 250.		175, 200, 225, 250.		250, 300, 350, 400.			
Number of poles (P)			3	4	3	4	3	4	3	4	2	3	4	
Rated insulation voltage Ui (V)			AC		690		690		690		690		690	
			DC		—		—		—		—		250	—
Dimensions	 (mm)	a	105	140	105	140	105	140	105	140	140	140	185	
		b	165		165		165		165		257			
		c	68		86		86		86		103			
		ca	92		112		112		112		155			
		bb	126		126		126		126		194			
		aa	35		35		35		35		44			
		Weight (kg)		1.5	1.9	2.1	2.6	2.1	2.6	2.1	2.6	5.0	5.7	7.5
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 Icu AC	500V	20		25		42		50		14			
		440V	32		42		55		70		22			
		380V	36		50		70		85		25			
		220V(240V)	85		85		100		125		35			
	DC	250V	—		—		—		—		10	—	—	
		125V	—		—		—		—		15	—	—	
Connection			Clamp terminal		Clamp terminal		Clamp terminal		Clamp terminal		Busbar			
Optional accessories	Alarm switch (AL)		●		○		○		○		●			
	Auxiliary switch (AX)		●		○		○		○		●			
	Shunt trip (SHT)		●		○		○		○		●			
	Under-voltage trip (UVT)		●		—		—		—		●			
	Rotary handle (EH)		●		●		●		●		●			
	Terminal cover (TC)		●		●		●		●		●			
Trip Unit			Adj. thermal Fixed magnetic		Thermal magnetic		Thermal magnetic		Thermal magnetic		Thermal magnetic			
Tripping button			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.

400								630			
BM400-SN		BM400-HN		BM400-RN		BM400-UN		BM630-CN		BM630-SN	
											
250, 300, 350, 400.		250, 300, 350, 400.		250, 300, 350, 400.		250, 300, 350, 400.		500, 600, 630.		500, 630.	
3	4	3	4	3	4	3	4	3	3	4	
690		690		690		690		690		690	
—		—		—		—		250		250	
140	185	140	185	140	185	140	185	210	210	280	
257		257		257		257		275		275	
103		103		103		103		103		103	
155		155		155		155		155		155	
194		194		194		194		243		243	
44		44		44		44		70		70	
5.7	7.5	5.7	7.5	5.7	7.5	5.7	7.5	10	10	13	
20		25		42		65		14		20	
30		42		55		85		22		30	
35		50		70		85		25		35	
50		85		100		125		35		50	
—		—		—		—		10		20	—
—		—		—		—		—		—	
Busbar		Busbar		Busbar		Busbar		Busbar		Busbar	
●		●		●		●		●		●	
●		●		●		●		●		●	
●		●		●		●		●		●	
●		●		●		●		●		●	
●		●		●		●		●		●	
●		●		●		●		●		●	
Thermal magnetic		Thermal magnetic		Thermal magnetic		Thermal magnetic		Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic	
Equipped		Equipped		Equipped		Equipped		Equipped		Equipped	

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MCCB
ELCB

ATS

ACB

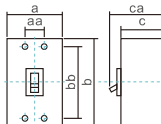
MCB

SPD

MS

MMS

Molded Case Circuit Breaker

Frame size (AF) (Inm)			630						800									
Type			BM630-HN		BM630-RN		BM630-UN		BM800-CN		BM800-SN							
Appearance																		
Rated current In (A) at ambient temp. 40°C			500, 630.		500, 630.		500, 630.		700, 800.		700, 800.							
Number of poles (P)			3	4	3	4	3	4	3	4	3	4						
Rated insulation voltage Ui (V)			AC		690		690		690		690							
			DC		250	—	—		—		250	—	250	—				
Dimensions  (mm)			a	210	280	210	280	210	280	210	280	210	280					
			b	275		275		275		275		275						
			c	103		103		103		103		103						
			ca	155		155		155		155		155						
			bb	243		243		243		243		243						
			aa	70		70		70		70		70						
			Weight (kg)		10	13	10	13	10	13	10.5	13.5	10.5	13.5				
Rated breaking capacity (kA)			IEC 60947-2 EN 60947-2 Icu AC		500V	25		42		65		20		25				
					440V	50		70		85		30		50				
					380V	50		70		100		35		50				
					220V(240V)	85		100		125		50		85				
			DC		250V	40	—		—		—		20	—		40	—	
					125V	—		—		—		—		—		—		
Connection			Busbar		Busbar		Busbar		Busbar		Busbar							
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 Adj. magnetic		Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic							
Tripping button			Equipped		Equipped		Equipped		Equipped		Equipped							

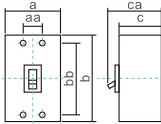
Note 1 "●" which can be installed by client, "○" which have to be installed by manufacturer. "—" which is not available.

Above accessories table is for 3P breaker.

2. Ics= 50% Icu

800		1000		1200	1600
BM800-HN		BM800-RN		BM1000-HS	BM1600-HS
					
700, 800.		700, 800.		1000	1200
1400, 1600.					
3	4	3	4	3	3
690		690		690	690
—		—		—	—
210	280	210	280	210	210
275		275		406	406
103		103		140	140
155		155		190	190
243		243		375	375
70		70		70	70
10.5	13.5	10.5	13.5	23	23
42		65		65	65
70		85		85	85
70		100		100	100
100		125		130	130
—		—		—	—
—		—		—	—
Busbar		Busbar		Busbar	Busbar
●		●		○	○
●		●		○	○
●		●		○	○
●		●		○	○
●		●		—	—
●		●		—	—
Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic	Fixed thermal Adj. magnetic
Equipped		Equipped		Equipped	Equipped

Molded Case Circuit Breaker (BMA Series)

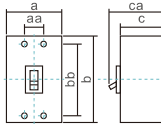
Frame size (AF) (Inm)			125			160			250			400		
Model			BMA125 -STA	BMA125 -LTA	BMA125 -HTA	BMA160 -STA	BMA160 -LTA	BMA160 -HTA	BMA250 -STA	BMA250 -LTA	BMA250 -HTA	BMA400 -LTA	BMA400 -HTA	BMA400 -RTA
Appearance														
Rated current In (A) at ambient temp. 40°C			15, 16, 20, 25, 30, 32, 40, 50, 60, 63, 75, 80, 100, 125A			40, 50, 60, 63, 70, 75, 80, 100, 125, 140, 150, 160A			175, 200, 225, 250A			250, 300, 350, 400A		
Number of poles (P)			3		4	3		4	3		4	3		4
Rated insulation voltage Ui (V)		AC	800			800			800			800		
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
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 AC Icu	690V	8 kA	8 kA	10 kA	8 kA	8 kA	10 kA	8 kA	8 kA	10 kA	8 kA	10 kA	15 kA
		415V	25 kA	36 kA	50 kA	25 kA	36 kA	50 kA	25 kA	36 kA	50 kA	36 kA	50 kA	70 kA
		380V	25 kA	36 kA	50 kA	25 kA	36 kA	50 kA	25 kA	36 kA	50 kA	36 kA	50 kA	70 kA
		220V(240V)	50 kA	85 kA	100 kA	85 kA	85 kA	100 kA	85 kA	85 kA	100 kA	70 kA	85 kA	100 kA
Connection			Clamp terminal	Clamp terminal	Clamp terminal	Clamp terminal	Clamp terminal	Clamp terminal	Clamp terminal	Clamp terminal	Clamp terminal	Busbar	Busbar	Busbar
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	Equipped	Equipped	Equipped	Equipped	Equipped	Equipped	Equipped	Equipped

Note 1. Ics=100%Icu

630		800		630		800		1250	
BMA630-HTD	BMA630-RTD	BMA800-HTD	BMA800-RTD	BMA630-HED	BMA630-RED	BMA800-HED	BMA800-RED	BMA1250-HED	BMA1250-RED
									
500, 600, 630A		700, 800A		630A		800A		1250A	
3	4	3	4	3	4	3	4	3	4
1000		1000		1000		1000		1000	
210	280	210	280	210	280	210	280	210	280
275	275	275	275	275	275	275	275	327	327
103	103	103	103	103	103	103	103	141	141
155	155	155	155	155	155	155	155	205	205
243	243	243	243	243	243	243	243	200	200
70	70	70	70	70	70	70	70	199	339
10	13	10	13	11.5	15.3	12	15.8	13.3	17.2
10 kA	15 kA	10 kA	15 kA	10 kA	15 kA	10 kA	15 kA	35kA	45 kA
50 kA	70 kA	50 kA	70 kA	50 kA	70 kA	50 kA	70 kA	50 kA	70 kA
50 kA	70 kA	50 kA	70 kA	50 kA	70 kA	50 kA	70 kA	50 kA	70 kA
85 kA	100 kA	85 kA	100 kA	85 kA	100 kA	85 kA	100 kA	—	—
Busbar	Busbar	Busbar	Busbar	Busbar	Busbar	Busbar	Busbar	Busbar	Busbar
●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	—	—
●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	—	—
Fixed Thermal Adjustable Magnetic		Fixed Thermal Adjustable Magnetic		Electronic		Electronic		Electronic	
Equipped	Equipped	Equipped	Equipped	Equipped	Equipped	Equipped	Equipped	Equipped	Equipped

Molded Case Circuit Breaker (Electronic trip Unit)

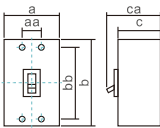


Frame size (AF) (Inm)			100			160			250		
Type			BM100-HE BM100-RE BM100-UE			BM160-HE BM160-RE BM160-UE			BM250-HE BM250-RE BM250-UE		
Rated current In (A) at ambient temp. 40°C			100			160			250		
Electronically adjustable current Ir (A)			40, 45, 50, 60, 70, 80, 90, 95, 100.			64, 72, 80, 96, 112, 128, 144, 152, 160.			100, 113, 125, 150, 175, 200, 225, 238, 250.		
Rated operational voltage Ue (V)			400			400			400		
Rated insulation voltage Ui (V)			690			690			690		
Rated impulse withstand voltage Uimp (V)			8000			8000			8000		
Number of poles (P)			3P / 4P			3P / 4P			3P / 4P		
Model			HE	RE	UE	HE	RE	UE	HE	RE	UE
Rated breaking capacity Icu (kA)			50	70	85	50	70	85	50	70	85
Dimensions (mm)		a	105 / 140			105 / 140			105 / 140		
		b	165			165			165		
		c	86			86			86		
		ca	112			112			112		
		bb	126			126			126		
		aa	35			35			35		
Weight (kg)			2.5 / 3.0			2.5 / 3.0			2.5 / 3.0		
Endurance	Electrical life (10 thousand)		1,000			1,000			1,000		
	Mechanical life (10 thousand)		8,500			7,000			7,000		
Connection			Clamp terminal			Clamp terminal			Clamp terminal		
Trip unit			Electronic			Electronic			Electronic		
Trip button			Equipped			Equipped			Equipped		
Optional accessories	Alarm switch	(AL)	○			○			○		
	Auxiliary switch	(AX)	○			○			○		
	Shunt trip	(SHT)	○			○			○		
	Under-voltage trip	(UVT)	—			—			—		
	Lead wiring terminal	(LT)	○			○			○		
	Motor operation device		○			○			○		
	Communication	(COM)	○			○			○		
Communication	(HUB)	○			○			○			

Note 1. Ics= 50% Icu

400			630			800			1000		1250	
BM400-HE	BM400-RE	BM400-UE	BM630-HE	BM630-RE	BM630-UE	BM800-SE	BM800-HE	BM800-RE	BM1000-SE	BM1000-HE	BM1250-SE	BM1250-HE
400			630			800			1000		1250	
160, 180, 200, 240, 280, 320, 360, 380, 400.			252, 284, 315, 378, 441, 504, 567, 600, 630.			320, 360, 400, 480, 560, 640, 720, 760, 800.			400, 450, 500, 600, 700, 800, 900, 950, 1000.		500, 563, 625, 750, 875, 1000, 1125, 1188, 1250.	
400			400			400			400		400	
690			690			690			690		690	
8000			8000			8000			8000		8000	
3P / 4P			3P / 4P			3P / 4P			3P		3P	
HE	RE	UE	HE	RE	UE	SE	HE	RE	SE	HE	SE	HE
50	70	85	50	70	85	50	70	85	70	85	70	85
140 / 185			210 / 280			210 / 280			210		210	
257			275			275			406		406	
103			103			103			140		140	
144			155			155			190		190	
194			243			243			375		375	
44			70			70			70		70	
7 / 8			11.5 / 14.5			11.5 / 14.5			26		26	
1, 000			1, 000			500			500		500	
4, 000			4, 000			2, 500			2, 500		2, 500	
Busbar			Busbar			Busbar			Busbar		Busbar	
Electronic			Electronic			Electronic			Electronic		Electronic	
Equipped			Equipped			Equipped			Equipped		Equipped	
○			○			○			○		○	
○			○			○			○		○	
○			○			○			—		—	
○			○			○			—		—	
—			—			—			—		—	
○			○			○			—		—	
○			○			○			—		—	
○			○			○			—		—	

Earth Leakage Circuit Breaker

Frame size (AF) (Inm)			50		100			
Type			BL50-SN		BL100-SN		BL100-HN	
Appearance								
Rated current In (A) at ambient temp. 40°C			15, 20, 30, 40, 50.		15, 20, 30, 40, 50, 60, 75, 100.		15, 20, 30, 40, 50, 60, 75, 100.	
Phase & wire (P)			1ø2W, 3ø3W.	3ø4W	1ø2W, 3ø3W.	3ø4W	1ø2W, 3ø3W.	3ø4W
Number of poles (P)			3	4	3	4	3	4
Rated voltage (VAC)			230, 400.		230, 400.		230, 400.	
High speed	Rated current sensitivity I Δ n (mA)		30, 100, 300, 500 (Note 2)		30, 100, 300, 500 (Note 2)		30, 100, 300, 500 (Note 2)	
	5I Δ n operating time (S)		0.04		0.04		0.04	
Delay	Rated current sensitivity I Δ n (mA)		100- 300- 500 adjustable		100- 300- 500 adjustable		100- 300- 500 adjustable	
	2I Δ n operating time (S)		0.1- 0.4- 0.8- 2.0 adjustable		0.1- 0.4- 0.8- 2.0 adjustable		0.1- 0.4- 0.8- 2.0 adjustable	
	2I Δ n max. non-operating time (S)		0, 0.2, 0.4, 1.0		0, 0.2, 0.4, 1.0		0, 0.2, 0.4, 1.0	
	Leakage detection mode		Mechanical push-button		Mechanical push-button		Mechanical push-button	
Dimensions	 (mm)	a	75	100	90	120	90	120
		b	130		155		155	
		c	68		68		68	
		ca	90		90		90	
		bb	111		132		132	
		aa	25		30		30	
Weight (kg)			0.7	0.9	1.5	1.8	1.5	1.8
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 CNS 14816-2 AC Icu	440V	7.5		10		25	
		380V	7.5		15		30	
		220V	10		25		50	
Connection			Clamp terminal		Clamp terminal		Clamp terminal	
Optional accessories	Alarm switch (AL)		○		○		○	
	Auxiliary switch (AX)		○		○		○	
	Shunt trip (SHT)		○		○		○	
	Under-voltage trip (UVT)		—		○		○	
	Rotary handle (EH)		●		●		●	
	Terminal cover (TC)		●		●		●	
	Leakage alarm module (AM)		—		○		○	
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 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)

160		250		400					
BL160-SN		BL250-SN		BL400-SN		BL400-HN		BL400-RN	
									
125, 140, 160.		175, 200, 225, 250.		250, 300, 350, 400.		250, 300, 350, 400.		250, 300, 350, 400.	
1ø2W, 3ø3W.	3ø4W	1ø2W, 3ø3W.	3ø4W	1ø2W, 3ø3W.	3ø4W	1ø2W, 3ø3W.	3ø4W	1ø2W, 3ø3W.	3ø4W
3	4	3	4	3	4	3	4	3	4
230, 400.		230, 400.		230, 400.		230, 400.		230, 400.	
30, 100-300-500 Adj.		30- 100- 500 adjustable		30- 100- 500 adjustable		30- 100- 500 adjustable		30- 100- 500 adjustable	
0.04		0.04		0.04		0.04		0.04	
100- 300- 500 adjustable		100- 300- 500 adjustable		100- 300- 500 adjustable		100- 300- 500 adjustable		100- 300- 500 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		0.1- 0.4- 0.8- 2.0 adjustable		0.45- 1.0- 2.0 adjustable	
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	
Mechanical push-button		Mechanical push-button		Mechanical push-button		Mechanical push-button		Mechanical push-button	
105	140	105	140	140	185	140	185	140	185
165		165		257		257		257	
68		68		103		103		103	
92		92		155		155		155	
126		126		194		194		194	
35		35		44		44		44	
1.7	2.3	1.7	2.3	6.6	8.4	6.6	8.4	5.7	7.5
25		25		30		42		55	
30		30		35		50		70	
50		50		50		85		100	
Clamp terminal		Clamp terminal		Busbar		Busbar		Busbar	
●		●		●		●		●	
●		●		●		●		●	
●		●		●		●		●	
●		●		●		●		●	
●		●		●		●		●	
●		●		●		●		●	
○		○		○		○		○	
Adj. thermal Fixed magnetic		Adj. thermal Fixed magnetic		Thermal magnetic		Thermal magnetic		Thermal magnetic	
Equipped		Equipped		Equipped		Equipped		Equipped	

Index

MCCB
ELCB

ATS

ACB

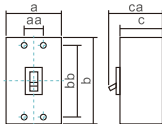
MCB

SPD

MS

MMS

Earth Leakage Circuit Breaker

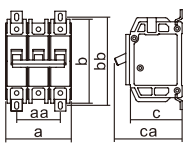
Frame size (AF) (Inm)			400		630			
Type			BL400-UN		BL630-HN		BL630-RN	
Appearance								
Rated current In (A) at ambient temp. 40°C			250, 300, 350, 400.		500, 630.		500, 630.	
Phase & wire (P)			1ø2W, 3ø3W.	3ø4W	1ø2W, 3ø3W.	3ø4W	1ø2W, 3ø3W.	3ø4W
Number of poles (P)			3	4	3	4	3	4
Rated voltage (VAC)			230, 400.		230, 400.		230, 400.	
High speed	Rated current sensitivity IΔn (mA)		30- 100- 500 adjustable		100- 300- 500 adjustable		100- 300- 500 adjustable	
	5IΔn operating time (S)		0.04		0.04		0.04	
Delay	Rated current sensitivity IΔn (mA)		100- 300- 500 adjustable		100- 300- 500 adjustable		100- 300- 500 adjustable	
	2IΔn operating time (S)		0.45- 1.0- 2.0 adjustable		0.45- 1.0- 2.0 adjustable		0.45- 1.0- 2.0 adjustable	
	2IΔn 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	140	185	210	280	210	280
		b	257		257		257	
		c	103		103		103	
		ca	155		155		155	
		bb	194		243		243	
		aa	44		70		70	
Weight (kg)			5.7	7.5	10.0	13.0	10.0	13.0
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 CNS 14816-2 AC Icu	440V	85		50		70	
		380V	85		50		70	
		220V	125		85		100	
Connection			Busbar		Busbar		Busbar	
Optional accessories	Alarm switch (AL)	●		●		●		
	Auxiliary switch (AX)	●		●		●		
	Shunt trip (SHT)	●		●		●		
	Under-voltage trip (UVT)	●		●		●		
	Rotary handle (EH)	●		●		●		
	Terminal cover (TC)	●		●		●		
	Leakage alarm module (AM)	○		○		○		
Trip Unit			Thermal magnetic		Fixed thermal Adj. magnetic		Fixed thermal Adj. 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 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.

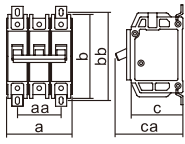
630		800					
BL630-UN		BL800-SN		BL800-HN		BL800-RN	
							
500, 630.		700, 800.		700, 800.		700, 800.	
1ø2W, 3ø3W.	3ø4W	1ø2W, 3ø3W.	3ø4W	1ø2W, 3ø3W.	3ø4W	1ø2W, 3ø3W.	3ø4W
3	4	3	4	3	4	3	4
230, 400.		230, 400.		230, 400.		230, 400.	
100- 300- 500 adjustable		100- 300- 500 adjustable		100- 300- 500 adjustable		100- 300- 500 adjustable	
0.04		0.04		0.04		0.04	
100- 300- 500 adjustable		100- 300- 500 adjustable		100- 300- 500 adjustable		100- 300- 500 adjustable	
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	
0.1, 0.5, 1.0		0.1, 0.5, 1.0		0.1, 0.5, 1.0		0.1, 0.5, 1.0	
Mechanical push-button		Mechanical push-button		Mechanical push-button		Mechanical push-button	
210	280	210	280	210	280	210	280
257		257		257		257	
103		103		103		103	
155		155		155		155	
243		243		243		243	
70		70		70		70	
10.0	13.0	10.5	13.5	10.5	13.5	10.5	13.5
85		50		70		85	
100		50		70		100	
125		85		100		125	
Busbar		Busbar		Busbar		Busbar	
●		●		●		●	
●		●		●		●	
●		●		●		●	
●		●		●		●	
●		●		●		●	
●		●		●		●	
○		○		○		○	
Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic	
Equipped		Equipped		Equipped		Equipped	

Molded Case Circuit Breaker

Bolt on type

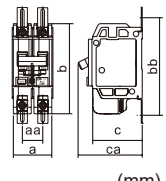
Frame (AF)			100			50	100			50	100			50	100		
Type			BP			BPH			BKH			BKS					
Appearance																	
Rated Voltage (A.C) #1			110	220*	220	110	220*	220	110/220*	380	110/220*	220					
Rated Current In (A) At Ambient Temp. 40°C			10*, 15, 20, 30, 40, 50, 60, 75, 100.			15, 20, 30, 40, 50.			15, 20, 30, 40, 50, 60, 75, 100.			15, 20, 30, 40, 50, 60, 75, 100.			15, 20, 30, 40, 50, 60, 75, 100.		
Number of poles (P)			1	2	3	1	2	3	1	2	3	1	2	3			
Dimensions	 (mm)	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					

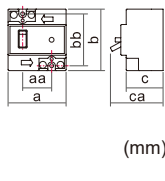
Plug in type

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		110/220*		380											
Rated Current In (A) At Ambient Temp. 40°C			15, 20, 30 40, 50.		15, 20, 30, 40, 50 60, 75, 100.		15, 20, 30 40, 50.		15, 20, 30, 40, 50. 60, 75, 100.		15, 20, 30 40, 50.		15, 20, 30, 40, 50 60, 75, 100.											
Number of poles (P)			1		2		3		2		3		1		2		3							
Dimensions	 (mm)	a	25		50		75		25		50		75		25		50		75					
		b	74					74					74					79						
		c	60.5					60.5					60.5					61						
		ca	74					74					74					77.5						
		bb	—					—					—					—						
		aa	0		25		50		0		25		50		25		50		0		25		50	
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°C	15, 20, 30, 40, 50.										
Phase & Wire	1φ2W										
Number of poles (P)	2P1E	2P2E	2P1E	2P2E	2P1E	2P2E	2P1E	2P2E	2P1E	2P2E	
Rated Voltage (A.C.) #1.	110	220	220***	220	110	220	220***	220	220***	220/380	
Rated Current Sensitivity (mA) #2.	30, (100, 200, 300, 500)*				30				30, (100, 200, 300, 500)*		
Max. Operating Time (s)	≤0.1S										
Rated Breaking Capacity (kA) CNS 5422 Icu AC	110V	5	—	10	—	5	—	10	—	15	—
	220V	—	5	5	10	—	5	5	10	10	15
Dimensions 	a	25	50	25	50	25	50	25	50	50	75
	b	110				92				95	
	c	60				60.5				58.5	
	ca	78.4				78.4				77.5	
	bb	120				—				100	
	aa	0	25	0	25	0	25	0	25	25	50
Weight (kg)	0.22	0.39	0.22	0.39	0.2	0.34	0.2	0.34	0.4	0.58	
Trip Unit	Thermal Magnetic										
Earth Leakage Tripping Device	Mechanical										

Earth Leakage, Overload Protection				Earth Leakage Protection			
Frame (AF)	30			40	30		
Type	BL-KLF			BL-KF	BL-K30F		
Appearance							
Rated Current In(A) At Ambient Temp. 40°C	15, 20, 30			15, 20, 30, 40	15, 20, 30		
Phase & Wire	1φ2W			1φ2W	1φ3W 3φ3W		
Poles (P)	2P1E	2P2E		2	3		
Rated Voltage (A.C.)	110~220			110~220	110~220	380~440	
Rated Current Sensitivity (mA) #2.	30			30, (100, 200, 300, 500)*	30		
Max. Operating Time (s)	≤0.15			≤0.15	≤0.15		
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

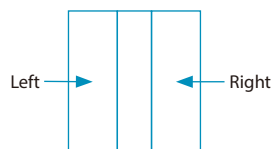
Model	Poles	AL	AX	SHT or UVT	AL+AX	AL+ SHT or UVT	AX+ SHT or UVT	AL+AX+ SHT or UVT					
BM30-SN BM50-CN BM60-SN/ HN BM100-SN / MN	3P							—					
BL50-SN	3P 4P						<td>—</td>	—					
BL100-SN BL100-HN	3P 4P			<td></td> <td></td> <td></td> <td><td>—</td></td>				<td>—</td>	—				
BM100-HBN BM160-SN/ HN BM250-SN/ HN BMA125-ST/LTA/HTA BMA160-ST/LTA/HTA BMA250-ST/LTA/HTA	3P 4P												
BL160-SN BL250-SN	3P 4P				—	—	—	—					
BM400-SN/ HN/ RN/ UN	3P 4P												
BL400-SN/ HN/ RN/ UN BMA400-LTA/HTA/RTA	3P 4P						—						
BM630-SN/ HN/ RN/ UN BM800-CN/ SN/ HN/ RN BMA630-HTA/RTA BMA800-HTA/RTA	3P 4P												
BM1000-HS BM1200-HS BM1600-HS	3P				—			—					

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

Note:

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

● : AL
○ : AX
■ : SHT or UVT



Optional Accessories | Application Table

■ Rotary Handle

TYPE	Poles	Model
EH-100N	2P 、 3P 、 4P	BM30-SN, BM50-CN, BM60-SN/HN, BM100-SN/MN, BL50-SN
EH-125N	2P 、 3P 、 4P	BM60-HBN, BM100-HN, BM125-SN/HN, BL100-SN/HN, BMA125-STA/LTA/HTA
EH-250N	3P 、 4P	BM100-HBN, BM160-SN/HN, BM250-SN/HN, BL160-SN, BL250-SN
EH-250T	2P 、 3P 、 4P	BMA160-STA/LTA/HTA, BMA250-STA/LTA/HTA
EH-400N	3P 、 4P	BM400-SN/HN/RN/UN, BL400-SN/HN/RN/UN, BMA400-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-HTA/RTA, BMA800-HTA/RTA
EH-250H	3P 、 4P	BM100-H/HC/HS, BM160-HB/HC/HS, BM250-HB/HC/HS

■ Extended Rotary Handle

TYPE	Poles	Model
MA-100N	3P 、 4P	BM30-SN, BM50-CN, BM60-SN/HN, BM100-SN/MN, BL50-SN
MA-125N	3P 、 4P	BM60-HBN, BM100-HN, BM125-SN/HN, BL100-SN/HN, BMA125-STA/LTA/HTA
MA-250N	3P 、 4P	BM100-HBN, BM160-SN/HN, BM250-SN/HN, BL160-SN, BL250-SN
MA-250T	3P 、 4P	BMA160-STA/LTA/HTA, BMA250-STA/LTA/HTA
MA-400N	3P 、 4P	BM400-SN/HN/RN/UN, BL400-SN/HN/RN/UN, BMA400-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-HTA/RTA, BMA800-HTA/RTA
MA-250H	3P 、 4P	BM100-H/HC/HS, BM160-HB/HC/HS, BM250-HB/HC/HS

■ Motor Operation Device

TYPE	Poles	Model
MT-100N	3P 、 4P	BM30-SN, BM50-CN, BM60-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	BM100-HBN, 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
MT-800N	3P 、 4P	BM630-SN/HN/RN/UN, BM800-CN/SN/HN/RN, BL630-HN/RN/UN, BL800-SN/HN/RN, BMA630-HTA/RTA, BMA800-HTA/RTA
MT-250E	3P 、 4P	BM100-H/HC/HS, BM160-HB/HC/HS, BM250-HB/HC/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, 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-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	BM100-HBN, BM160-SN/HN, BM250-SN/HN, BL160-SN, BL250-SN
PGI-400N	3P 、 4P	BM400-SN/HN/RN/UN, BL400-SN/HN/RN/UN
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-H/HC/HS, BM160-HB/HC/HS, BM250-HB/HC/HS

Optional Accessories | Dimensions

Rotary Handle

Type	Poles	fig.1			fig.2			fig.3		
		A	B	C	D	E	F	G	H	J
EH-100N	2P、3P、4P	104	105	39	90	78	10	* 25	111	M4 screw or ø5
EH-125N	2P、3P、4P	104	105	39	90	78	10	* 30	132	
EH-250N	3P, 4P	104	105	39	90	78	10	35	126	
EH-250T	3P, 4P	104	105	39	90	78	10	35	126	
EH-400N	3P, 4P	150	183	53	108	112	10	44	194	
EH-800N	3P, 4P	150	183	53	108	112	10	70	243	
EH-250H	3P, 4P	104	125	39	90	78	10	35	126.5	

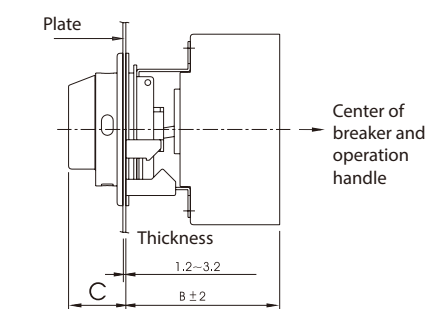
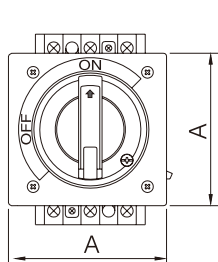
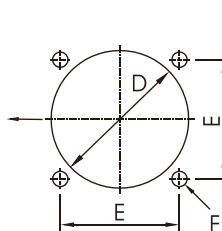
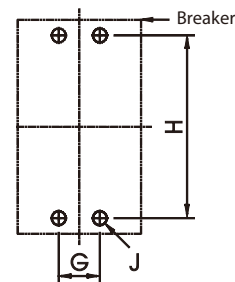


Fig. 1



Panel Dimension

Fig. 2



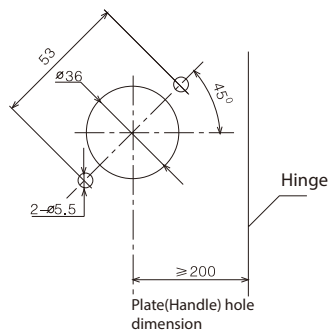
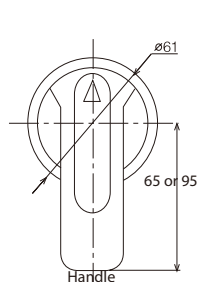
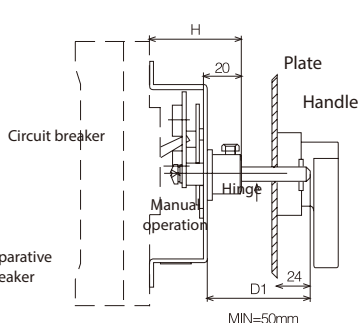
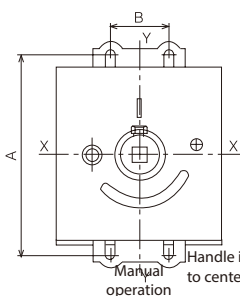
Breaker Dimension

Fig. 3

- Note: 1. Standard: White, optional: Black.
2. Optional for dust and water protection.
3. L: long type, EH100NL & EH125NL can not install to 2P.
4. * indicates the value is not applied to 2P model.

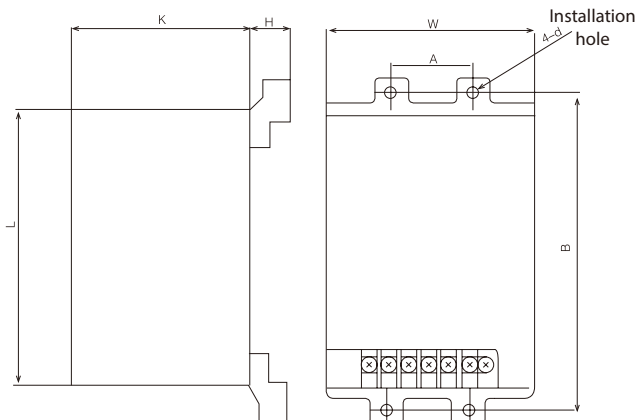
Extended Rotary Handle

Type	Dimensions (mm)			
	A	B	H	Y
MA-100N	111	25	53.5	+8
MA-125N	132	30	54	+8
MA-250N	146	35	56	0
MA-250T	146	35	55	0
MA-400N	221	45	85	+10
MA-800N	242	70	85	+10



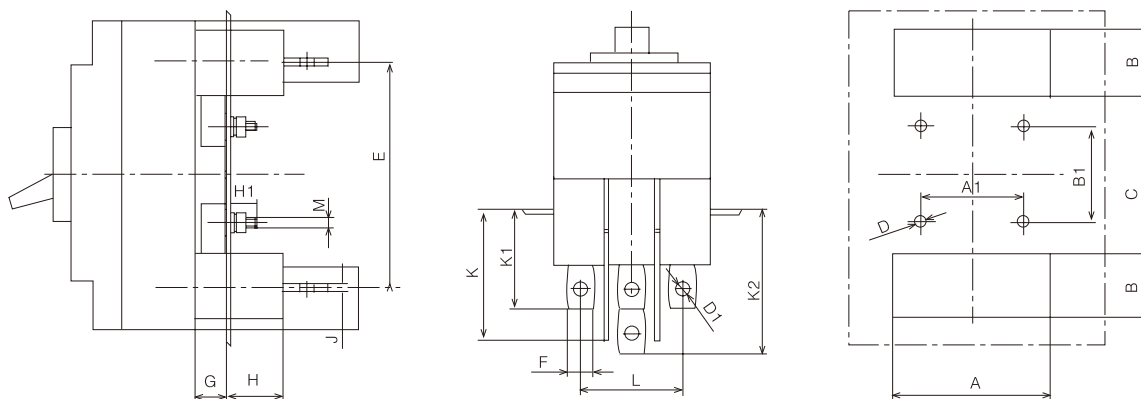
Motor Operation Device

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



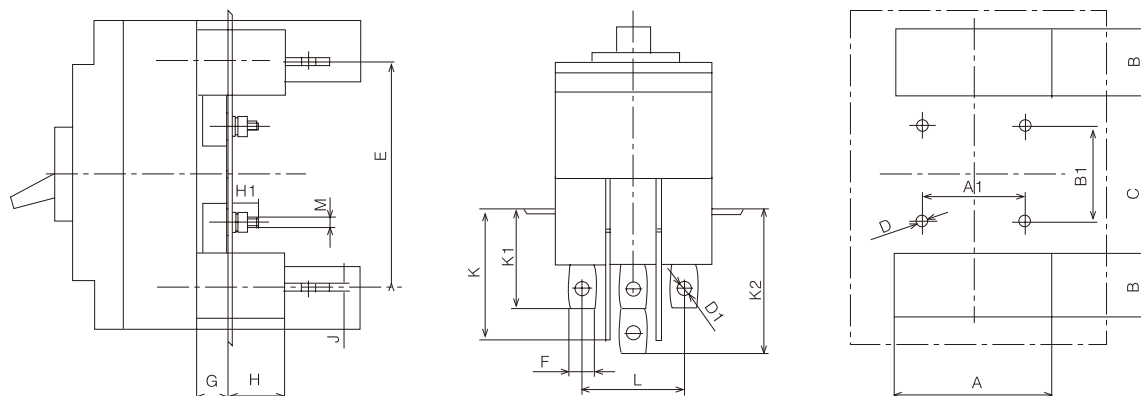
Rear Connection

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	—

800		1250		2500		5000	
AC800V							
12kV							
AC400V							
AC220V, 50Hz							
630, 800		1000, 1250		1600, 2000, 2500		3200, 4000, 5000	
3	4	3	4	3	4	3	4
6	6	6	8	8	9	18	20
2							
120kA		120kA		—		200kA	
50kA		50kA		50kA		—	
AC-33B, DC-33B						AC-33A, DC-33B	
≤1s							
Electrical: 6000 Mechanical: 10000							
120 times / hr							
2NO2NC on both source AC110V, 5A AC220V, 3A DC220V, 0.2A							



ATS Controller Specification

• XST-6

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

ATS (Automatic Transfer Switches)

A. MCCB Type

(Controller voltage: AC 220V)



Type	Pole	Rated current In (A)	Rated Breaking Capacity Sym r.m.s. (kA) IEC 60947-2 AC 1cu	
			220V	380V
BS100SN	2P, 3P, 4P	10, 15, 20, 30, 40, 50, 60, 75, 100.	25	15
BS100HN	2P, 3P, 4P		50	30
BS250SN	2P, 3P, 4P	125, 150, 175, 200, 225, 250.	50	30
BS400SN	2P, 3P, 4P		50	35
BS400HN	2P, 3P, 4P	250, 300, 350, 400.	85	50
BS630SN	3P, 4P		50	35
BS630HN	3P, 4P	500, 600, 630.	85	50
BS800SN	3P, 4P		85	50
BS1000HS	3P	1000	130	100
BS1200HS	3P	1200	130	100
BS1600HS	3P	1400, 1600.	130	100

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

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

Air Circuit Breaker



Frame Size			1600AF		2000AF		2500AF		3200AF		4000AF		6300AF	
Model			BW-1600		BW-2000		BWA-2500		BW-3200		BW-4000		BW-6300	
Rated Current, In			400/630/ 800/1000	1250/ 1600	630/ 800/1000	1250/ 1600/2000	400/630/800/ 1000/1250/ 1600/2000	2500	2000/ 2500	3200	4000	5000	6300	
Pole			3P / 4P		3P / 4P		3P / 4P		3P / 4P		3P / 4P		3P / 4P	
Frequency (Hz)			50 / 60HZ		50 / 60HZ		50/60HZ		50 / 60HZ		50 / 60HZ		50 / 60HZ	
Rated Voltage, Ue			AC690V		AC690V		AC 400/415/690V		AC690V		AC690V		AC690V	
Rated Impulse Withstand Voltage, Uimp			12kV		12kV		12kV		12kV		12kV		12kV	
Insulation Voltage, Ui			AC1000V		AC1000V		AC1000V		AC1000V		AC1000V		AC1000V	
Rated Current of Neutral (%)			100%In		100%In		100%In		100%In		100%In		100%In	
Breaking Capacity	Model		SN		HS	HN	H		HS	HN	HS	HN	HS	
	Icu / Ics (kA)	690V	50/50		50/50	55/55	65 / 65		60/50	55/55	60/50	55/55	85/85	
		380/400/415V	65/65		80/50	85/85	85 / 85		100/65	100/100	100/65	100/100	120/100	
		240V	-		80/50	85/85	-		100/65	100/100	100/65	100/100	120/100	
	Icw (kA) 1sec	400/415V	50		50	65	85		65	85	65	85	100	
		690V	50		50	65	65		65	65	65	75	85	
Operating time (ms)	Max. total breaking time		≤ 30		40		40		40		40		40	40
	Max. closing time		≤ 70		80		80		80		80		80	80
Endurance	Mechanical	With maintenance	20,000		20,000		15000		20,000		20,000		10,000	10,000
		Without maintenance	15,000		10,000		30000		10,000		10,000		2,500	2,500
	Electrical	With maintenance	10,000	8,000	15,000		8000		13,000		12,000		2,000	2,000
		Without maintenance	10,000	8,000	8,000		6000		6,500		6,000		500	500
Dimension HxWxD (mm)	Fixed Type	3P	312×265×201		402×362×332		-		402×422×332		402×422×377		-	-
		4P	312×335×201		402×455×332		-		402×537×332		402×537×377		-	-
	Drawout Type	3P	345×275×300		430×375×421		435×405×448.5	435×405×473	430×435×421		430×465×466		435×842×505	435×960×505
		4P	345×345×300		430×470×421		435×500×448.5	435×500×473	430×550×421		430×580×466		435×956×492	

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

Index

MCCB
ELCB

ATS

ACB

MCB

SPD

MS

MMS

MCB (Miniature Circuit Breaker) | BHA Series

Applications:

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

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

BHA

·Overload, Short Circuit

BHA	2	2	C	32		
↓	↓	↓	↓	↓		
Type	Rated short-circuit breaking capacity (kA)	Poles (P)	Tripping characteristics	Rated current In (A)	Standard	Mechanical life
	Rated voltage (V)					
BHA	2: 4.5kA; 3: 6kA; 4: 10kA 230/400V	1, 2, 3, 4	C type: 5~ 10In D type: 10~ 15In	1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63.	IEC 60898	20, 000 operations
BHA	125: 10kA 230/240V: 1P 400/415V: 2/3/4P	1, 2, 3, 4	8~12In	80, 100, 125	IEC 60947-2	10, 000 operations
BHA	10kA 4: DC125V(1P) / DC250V(2P) 5: DC220V(1P) / DC440V(2P)	1, 2	DC Type	1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63.	IEC 60947-2	20, 000 operations

·BHA5 can't be used in IT system

BHL

·Overload, Short Circuit, Leakage

BHL	2	2	C	32	G
↓	↓	↓	↓	↓	↓
Type	Rated short-circuit breaking capacity (kA)	Poles (P)	Tripping characteristics	Rated current In (A)	Optional function (2P)
	Rated voltage (V)				
BHL	2: 4.5kA; 3: 6kA 230V	1P+N	C type: 5~ 10In D type: 10~ 15In	6, 10, 16, 20, 25, 32, 40.	Over-voltage protection (230V, internal built)
BHL	2: 4.5kA 230V: 2P ; 400V: 3P/4P	2, 3, 4	C type: 5~ 10In D type: 10~ 15In	1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63.	Over-voltage protection (230V, internal built)
BHL	3: 6kA 230/400V	2, 3, 4	C type: 5~ 10In D type: 10~ 15In	1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63.	Over-voltage protection (230V, internal built)

·Standard: IEC 61009

·Internal OVT over voltage range AC 280V ± 5%

BHL-A

·Overload, Short Current, Leakage

BHL-A	3	1	C	32	A	30	G
↓	↓	↓	↓	↓	↓	↓	↓
Type	Rated short-circuit breaking capacity (kA)	Poles (P)	Tripping characteristics	Rated current In (A)	Residual current type	Rated sensitivity current (mA)	Optional function (2P)
	Rated voltage (V)						
BHL-A	2: 4.5kA; 3: 6kA 230V	1P+N	C type: 5~ 10In D type: 10~ 15In	6, 10, 16, 20, 25, 32, 40, 50, 63	A, AC	30, 100, 300	Over-voltage protection (230V, internal built)

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	42	25	A	030
↓	↓	↓	↓	↓
Type	Poles (P)	Rated current In (A)	Residual current Type	Rated sensitivity current IΔn (mA)
BHR-A	42: 2P 44: 4P	25, 32, 40, 63	A, AC	030: 30 100: 100 300: 300



BHG

·Disconnect Switch

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



BHN

·N+L Overload, Short Circuit

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



· Standard: IEC 60898

BHZ

·Over / Under Voltage Protective Device with Auto-reset

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



· Standard: IEC 60898

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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
BHK	AL	AX	SHT	UVT	OVT	OUVT	Standard	Option	—	AC220~240V	DC48V	AC24~48V DC12~48V	AC12V	AC230~415V DC110~130V
	AL						○		○					
		AX					○	○	○					
			SHT				○	○				○	○	○
				UVT			○	○		○	○			
					OVT		○	○	○					
						OUVT	○	○	○					

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

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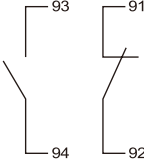
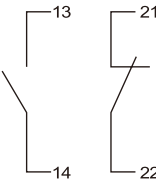
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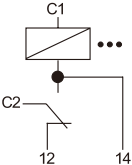
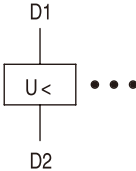
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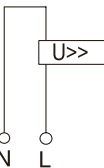
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Type	Auxiliary Contact		Width	Product Code
	AC/12		(mm)	
AL Alarm Switch		1NO. 1NC 230V 6A 440V 3A	9	BHK11
AX Auxiliary Contact		1NO. 1NC 230V 6A 440V 3A	9	BHK21 BHK22

Type	Control Voltage		Width	Product Code
	V AC	V DC	(mm)	
SHT Shunt Trip		12 24-48 230-415	12-48 110-130	18 BHK31 BHK32
UVT Under Voltage Trip		220-240	48	18 BHK41 BHK42

Type	Rated voltage	Current	Over voltage range	Trip time	Width (mm)	Product Code
OVT Over Voltage Trip		230V	15mA	280V±5%	≤0.25	18 BHK51 BHK52

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	≥ 2.5mm ²	≥ 6mm ²
					320		1.2				
BHP40	40: 40kA	8/20		R	275	230/400	1.3	8/20	20	≥ 4mm ²	≥ 16mm ²
					385		1.8				
BHP80	80: 80kA	8/20		R	275	230/400	1.8	8/20	40	≥ 10mm ²	≥ 25mm ²
					385		2.1				
BHP100	100: 100kA	8/20		R	275	230/400	2.1	8/20	60	≥ 16mm ²	≥ 25mm ²
					385		2.3				
BHP250	250: 25kA	10/350			275	230/400	2.3	10/350	25	≥ 25mm ²	≥ 35mm ²
					440		2.3				

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

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

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

SPD Counter

Model	TAD-04-99
Rated Voltage	85~250V
Max. Count	99
Display	LED
Dimension (mm)	91X69X18

Normal working conditions

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

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Magnetic Contactor / Motor Starter ♦ AC control



Model				9T	11	12T	12
Type	Magnetic Contactor	Nonreversing		S-P9T	S-P11	S-P12T	S-P12
		Reversing		S-P2XP9T	S-2xP11	S-P2XP12T	S-2xP12
	Motor Starter	without enclosure	Nonreversing	MSO-P9T	MSO-P11	MSO-P12T	MSO-P12
			Reversing	MSO-P2XP9T	MSO-2xP11	MSO-P2XP12T	MSO-2xP12
		with enclosure	Nonreversing	MS-P9T	MS-P11	MS-P12T	MS-P12
			Reversing	MS-P2XP9T	MS-2xP11	MS-P2XP12T	MS-2xP12
		with enclosure (push button)	Nonreversing	MS-P9TPB	MS-P11PB	MS-P12TPB	MS-P12PB
	TOR		Standard	TH-P12E	TH-P12 E	TH-P12E	TH-P12 E
			Differential	TH-P12PP	TH-P12PP	TH-P12PP	TH-P12PP
Rated Capacity	IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660	3 Ø	240V	2.5/3/11	3.5/ 4.5/ 13	3.5/4.5/13	3.5/ 4.5/ 13
			380/415V	4/5.5/9	5.5/ 7.5/ 12	5.5/7.5/12	5.5/ 7.5/ 12
			440V	4/5.5/9	5.5/ 7.5/ 12	5.5/7.5/12	5.5/ 7.5/ 12
			550V	4/5.5/7	5.5/ 7.5/ 9	7.5/10/12	5.5/ 7.5/ 9
			660V	4/5.5/6	5.5/ 7.5/ 7	7.5/10/9	5.5/ 7.5/ 7
		Operation current (Ith) AC1 (A)		25	20	25	20
		Rated insulation voltage (V)		AC690	AC660	AC690	AC660
	UL 508 CSA-C22.2	1 Ø	100~120V	0.5/9.8	0.5/ 9.8	0.75/13.8	0.5/ 9.8
			200~240V	1.5/10	2/ 10	2/12	2/ 12
		3 Ø	200~240V	3/9.6	3/ 9.6	5/15.2	3/ 9.6
			380~480V	5/7.6	7.5/ 11	7.5/11	7.5/ 11
			550~600V	7.5/9	10/ 11	10/11	10/ 11
		Operation current (Ith) AC1 (A)		25	24	25	24
		Rated insulation voltage (V)		AC600	AC600	AC600	AC600
	NEMA				-	0	-
Auxiliary Contact	IEC 60947-5-1 EN 60947-5-1 GB14048.4	Contact	Standard	1No 1NC	1NO	1No 1NC	1NO 1NC
			Special	-	1NC	-	2NC or 2NO
			220V	1.6	1.6	1.6	1.6
			380V	0.95	0.95	0.95	0.95
	AC 15	Operation current (Ith) AC1 (A)		16	16	16	16
		Contact class (UL)		A600 · Q300	A600, P600, Q300	A600 · Q300	A600, P600, Q300
		Electrical Life AC3			1.6 Mil.	1.6 Mil.	1.6 Mil.
Mechanical Life			10 Mil.	10 Mil.	10 Mil.	10 Mil.	
Operation (Time/Hour)			1200	1200	1200	1200	
Magnetic Contactor	Weight (kg)		0.34	0.33	0.34	0.35	
	Appearance Dimensions (W×H×D) (mm)		43×81×86	43×81×83.5	43×81×86	53×81×83.5	
	Installation Dimension (mm)						
	Mechanical Interlock			MPU-11	MPU-11	MPU-11	MPU-21

Magnetic Contactor / Motor Starter ◆ AC control



Model			15	16	21 (A)	25	30T	
Type	Magnetic Contactor	Nonreversing		S-P15	S-P16	S-P21 (A)	S-P25	S-P30T
		Reversing		S-2×P15	S-2×P16	S-2×P21 (A)	S-2×P25	S-2×P30T
	Motor Starter	without enclosure	Nonreversing	MSO-P15	MSO-P16	MSO-P21 (A)	MSO-P25	MSO-P30T
			Reversing	MSO-2×P15	MSO-2×P16	MSO-2×P21 (A)	MSO-2×P25	MSO-2×P30T
		with enclosure	Nonreversing	MS-P15	MS-P16	MS-P21 (A)	MS-P25	MS-P30T
			Reversing	MS-2×P15	MS-2×P16	MS-2×P21 (A)	MS-2×P25	MS-2×P30T
		with enclosure (push button)	Nonreversing	MS-P15PB	MS-P16PB	MS-P21PB (A)	MS-P25PB	MS-P30TPB
	TOR		Standard	TH-P12 E	TH-P20 E	TH-P20 E	TH-P20 E(TA)	TH-P20 E(TA)
			Differential	TH-P12PP	TH-P20PP	TH-P20PP	TH-P20(TA)PP	TH-P20(TA)PP
Rated Capacity	IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660	3 Ø	240V	4.5/ 6/ 18	4.5/ 6/ 18	5.5/ 7.5/ 24	6.5/ 8.5/ 26	7.5/ 10/ 30
			380/415V	7.5/ 10/ 18	7.5/ 10/ 18	11/ 15/ 21	12/ 16/ 25	15/ 20/ 30
			440V	7.5/ 10/ 16	7.5/ 10/ 16	11/ 15/ 21	12/ 16/ 23	15/ 20/ 27
			550V	7.5/ 10/ 13	7.5/ 10/ 13	11/ 15/ 17	12/ 16/ 20	15/ 20/ 22
			660V	7.5/ 10/ 9	7.5/ 10/ 9	11/ 15/ 14	12/ 16/ 16	15/ 20/ 18
		Continuous current (Ith) AC1 (A)		25	30	32	32	50
		Rated insulation voltage (Ui) (V)		AC660	AC660	AC660	AC660	AC660
	UL 508 CSA-C22.2 AC3 (HP/A)	1 Ø	100~120V	-	1/ 16	2/ 24	2/ 24	2/ 24
			200~240V	-	3/ 17	3/ 17	3/ 17	5/ 28
		3 Ø	200~240V	-	5/ 15.2	7.5/ 22	10/ 28	10/ 28
			380~480V	-	10/ 14	15/ 21	15/ 21	20/ 27
			550~600V	-	10/ 11	15/ 17	15/ 17	30/ 32
		Operation current (Ith) AC1 (A)		-	30	35	40	50
		Rated insulation voltage (Ui) (V)		-	AC600	AC600	AC600	AC600
	NEMA			0	0	1	1	2
Auxiliary Contact	IEC 60947-5-1 EN 60947-5-1 GB14048.4	Contact	Standard	1NO	1NO 1NC	1NO 1NC (2NO 2NC)	1NO 1NC	2NO 2NC
			Special	1NC	-	-	-	-
			220V	1.6	1.6	1.6	1.6	1.6
			380V	0.95	0.95	0.95	0.95	0.95
		Continuous current (Ith) AC1 (A)		16	16	16	16	16
		Contact class (UL)	-	A600, Q300	A600, Q300	A600, Q300	A600, Q300	A600, Q300
Electrical Life AC3			1.3 Mil.	1.3 Mil.	1.3 Mil.	1.3 Mil.	1.3 Mil.	
Mechanical Life			10 Mil.	10 Mil.	10 Mil.	10 Mil.	10 Mil.	
Operation (Time/Hour)			1200	1200	1200	1200	1200	
Magnetic Contactor	Weight (kg)		0.33	0.37	0.38	0.38	0.55	
	Appearance Dimensions (W×H×D) (mm)		43×81×83.5	53.5×81×83.5	53.5×81×83.5	53.5×81×83.5	73×95×93	
	Installation Dimension (mm)							
Mechanical Interlock			MPU-11	MPU-21	MPU-21	MPU-21	MPU-11	



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S-P38T

S-P40T

S-P50T

S-P60T

S-2XP32T

S-2XP35T

S-2XP38T

S-2XP40T

S-2XP50T

S-2XP60T

MSO-P32T

MSO-P35T

MSO-P38T

MSO-P40T

MSO-P50T

MSO-P60T

MSO-2xP32T

MSO-2xP35T

MSO-2xP38T

MSO-2xP40T

MSO-2xP50T

MSO-2xP60T

MS-P32T

MS-P35T

MS-P38T

MS-P40T

MS-P50T

MS-P60T

MS-2xP32T

MS-2xP35T

MS-2xP38T

MS-2xP40T

MS-2xP50T

MS-2xP60T

MS-P32TPB

MS-P35TPB

MS-P38TPB

MS-P40TPB

MS-P50TPB

MS-P60TPB

TH-P20 E(TA)

TH-P20 E(TA)

TH-P20 E(TA)

TH-P20 E(TA)

TH-P60 E

TH-P60 E(TA)

TH-P20(TA)PP

TH-P20(TA)PP

TH-P20(TA)PP

TH-P20(TA)PP

TH-P60PP

TH-P60(TA)PP

7.5/10/32

9/ 12.5/ 35

11/15/39

11/ 15/ 44

15/ 20/ 58

19/ 25/ 65

15/20/32

18.5/ 25/ 35

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50

50

60

60

80

90

AC660

AC660

AC660

AC660

AC660

AC660

-

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-

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-

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-

10/ 28

-

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20/ 54

-

20/ 27

-

20/ 27

30/ 40

40/ 52

-

30/ 32

-

30/ 32

40/ 41

50/ 52

-

50

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60

80

90

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AC600

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AC600

AC600

AC600

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1NO 1NC

2NO 2NC

2NO 2NC

2NO 2NC

2NO 2NC

2NO 2NC

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-

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

1.3 Mil.

1.3 Mil.

1.3 Mil.

1.3 Mil.

1.3 Mil.

1.3 Mil.

10 Mil.

10 Mil.

10 Mil.

10 Mil.

6 Mil.

6 Mil.

1200

1200

1200

1200

1200

1200

0.38

0.55

0.55

0.55

1.05

1.05

53.5x81x83.5

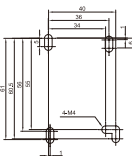
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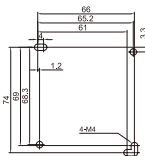
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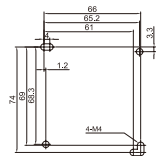
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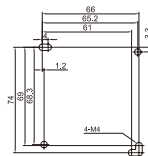
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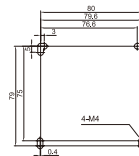
MPU-11



MPU-11



MPU-11



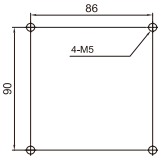
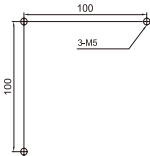
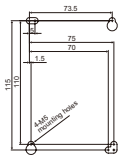
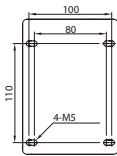
MPU-11



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×P80T	S-2×P100T	S-2×P100E	S-2×P125T	
	Motor Starter	without enclosure	Nonreversing	MSO-P80T	MSO-P100T	MSO-E100	MSO-P125T	
			Reversing	MSO-2×P80T	MSO-2×P100T	MSO-2×E100	MSO-2×P125T	
		with enclosure	Nonreversing	MS-P80T	MS-P100T	MS-E100	MS-P125T	
			Reversing	MS-2×P80T	MS-2×P100T	MS-2×E100	MS-2×P125T	
		with enclosure (push button)	Nonreversing	-	-	MS-E100PB	-	
	TOR		Standard	TH-P60 E(TA)	TH-P120 E(TA)	TH-E100E	TH-P120 E(TA)	
			Differential	TH-P60(TA)PP	TH-P120(TA)PP	TH-E100PP	TH-P120(TA)PP	
	Rated Capacity	IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660	3 Ø	240V	22/ 30/ 80	30/ 40/ 105	30/ 40/ 105	37/ 50/ 135
380/415V				45/ 60/ 80	60/ 80/ 105	55/ 75/ 100	75/ 100/ 130	
440V				45/ 60/ 75	60/ 80/ 105	60/ 80/ 100	75/ 100/ 130	
550V				45/ 60/ 60	60/ 80/ 85	60/ 80/ 85	75/ 100/ 105	
660V				45/ 60/ 50	60/ 80/ 70	60/ 80/ 70	75/ 100/ 90	
AC 3 (kW/HP/A)		Continuous current (Ith) AC1 (A)	100	135	135	170		
		Rated insulation voltage (Ui) (V)	AC660	AC660	AC690	AC660		
UL 508 CSA-C22.2		1 Ø	100~120V	7.5/ 80	-	-	-	
			200~240V	15/ 68	-	-	-	
		3 Ø	200~240V	25/ 68	30/ 80	-	50/ 130	
			380~480V	50/ 65	60/ 77	-	100/ 124	
			550~600V	60/ 62	60/ 62	-	100/ 99	
			AC3 (HP/A)		Continuous current (Ith) AC1 (A)	90	100	-
				Rated insulation voltage (Ui) (V)	AC600	AC600	-	AC600
NEMA			3	3	-	3		
Auxiliary Contact	IEC 60947-5-1 EN 60947-5-1 GB14048.4	Contact	Standard	2NO 2NC	2NO 2NC	1NO 1NC	2NO 2NC	
			Special	-	-	-	-	
			220V	1.6	1.6	3*	3.3	
			380V	0.95	0.95	1.9	1.6	
	AC 15		Operation current (Ith) AC1 (A)	16	16	10	16	
			Contact class (UL)	A600, Q300	A600, Q300	A600, Q300	A600, Q300	
	Electrical Life AC3			1.2 Mil.	1.2 Mil.	1 Mil.	1.2 Mil.	
Mechanical Life			6 Mil.	6 Mil.	6 Mil.	6 Mil.		
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)		100×142×116	120×116×128	85×125×127	106×152.5×140		
	Installation Dimension (mm)							
Mechanical Interlock			MPU-50	Assembled and adjusted by the factory	MEU-11	MPU-125		

Note: Mark * means the value is @240V

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200T

220T

300T

400T

S-P150T

S-P200T

S-P220T

S-P300T

S-P400T

S-2xP150T

S-2xP200T

S-2xP220T

S-2xP300T

S-2xP400T

MSO-P150T

MSO-P200T

MSO-P220T

MSO-P300T

MSO-P400T

MSO-2xP150T

MSO-2xP200T

MSO-2xP220T

MSO-2xP300T

MSO-2xP400T

MS-P150T

MS-P200T

MS-P220T

-

-

MS-2xP150T

MS-2xP200T

MS-2xP220T

-

-

-

-

-

-

-

TH-P120 E(TA)

TH-P220T E

TH-P220T E

TH-P400T E

TH-P400T E

TH-P120(TA)PP

TH-P220TPP

TH-P220TPP

TH-P400TPP

TH-P400TPP

45/ 60/ 165

55/ 75/ 200

65/ 85/ 225

90/ 125/ 300

110/ 150/ 400

90/ 125/ 160

110/ 150/ 200

120/ 160/ 220

160/ 220/ 300

220/ 300/ 400

90/ 125/ 160

110/ 150/ 190

120/ 160/ 220

185/ 250/ 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/ 220

280/ 380/ 305

200

240

260

350

450

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

200

240

260

350

450

AC600

AC600

AC600

AC1000

AC1000

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

1.2 Mil.

1.2 Mil.

1.2 Mil.

1.2 Mil.

1.2 Mil.

6 Mil.

6 Mil.

6 Mil.

6 Mil.

6 Mil.

1200

1200

1200

1200

1200

2.7

4.35

4.35

9.75

9.75

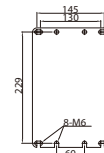
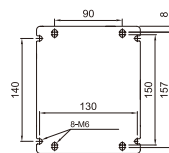
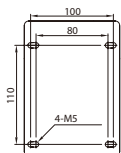
106×152.5×140

138×185×159.5

138×185×159.5

164×246×196.5

164×246×196.5



MPU-125

MPU-125

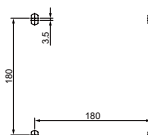
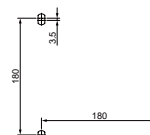
MPU-125

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MPU-125

Magnetic Contactor / Motor Starter ◆ AC control



Model			630T	800T	1260T	
Type	Magnetic Contactor	Nonreversing		S-P630T	S-P800T	S-P1260T
		Reversing		S-2XP630T	S-2XP800T	S-2XP1260T
	Motor Starter	without enclosure	Nonreversing	-	-	-
			Reversing	-	-	-
		with enclosure	Nonreversing	-	-	-
			Reversing	-	-	-
		with enclosure (push button)	Nonreversing	-	-	-
	TOR		Standard	TH-P600CT(E)	TH-P600CT(E)	-
			Differential	TH-P600CTPP	TH-P600CTPP	-
Rated Capacity	IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660 AC 3 (kW/HP/A)	3 ∅	240V	200 / 270 / 630	250 / 340 / 800	-
			380/415V	335 / 450 / 630	450 / 610 / 800	-
			440V	400 / 545 / 630	450 / 610 / 800	-
			550V	400 / 545 / 552	450 / 610 / 620	-
			660V	450 / 610 / 450	475 / 645 / 475	-
	Continuous current (Ith) AC1 (A)		800	1000	1260	
	Rated insulation voltage (Ui) (V)		AC1000	AC1000	AC1000	
	UL 508 CSA-C22.2 AC3 (HP/A)	1 ∅	100~120V	-	-	-
			200~240V	-	-	-
		3 ∅	200~240V	-	-	-
			380~480V	-	-	-
			550~600V	-	-	-
		Continuous current (Ith) AC1 (A)		-	-	-
		Rated insulation voltage (Ui) (V)		-	-	-
	NEMA			3	3	4
Auxiliary Contact	IEC 60947-5-1 EN 60947-5-1 GB14048.4 AC 15	Contact	Standard	2NO 2NC*	-	
			Special	-	-	
			220V	-	-	
			380V	-	-	
		Operation current (Ith) AC1 (A)		-	-	-
	Contact class (UL)		-	-	-	
Electrical Life AC3			500000	500000	-	
Mechanical Life			3000000	3000000	3000000	
Operation (Time/Hour)			-	-	-	
Magnetic Contactor	Weight (kg)		16.4	18.3	18.3	
	Appearance Dimensions (W×H×D) (mm)		304×309×255	338×309×255	338×309×255	
	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.

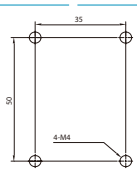
Magnetic Contactor / Motor Starter ♦ AC control

Mini Contactor



Thermal Overload Relay



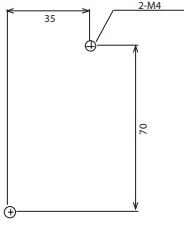
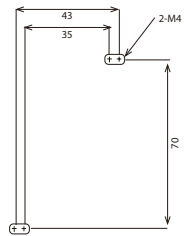
Model				06	09
Type	Magnetic Contactor	Nonreversing		S-P06	S-P09
		Reversing		S-2×P06	S-2×P09
	Motor Starter	without enclosure	Nonreversing	MSO-P06	MSO-P09
			Reversing	-	-
		with enclosure	Nonreversing	-	-
			Reversing	-	-
	TOR		Nonreversing	-	-
			Differential	TH-P09PP	TH-P09PP
Rated Capacity	IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660	3 Ø	240V	1.5/ 2/ 7.5	2.2/ 3/ 10.1
			380/415V	3/ 4/ 6.6	4/ 5.5/ 9
			440V	3/ 4/ 6.5	4/ 5.5/ 8.5
			550V	3/ 4/ 5	4/ 5.5/ 6.5
			660V	3/ 4/ 4	4/ 5.5/ 5
	AC 3 (kW/HP/A)	Continuous Current (Ith) AC1 (A)		20	20
		Rated insulation voltage (V)		AC660	AC660
	UL 508 CSA-C22.2	1 Ø	100~120V	0.25/ 5.8	0.5/ 9.8
			200~240V	1/ 8	1.5/ 10
		3 Ø	200~240V	2/ 6.8	3/ 9.6
			380~480V	3/ 4.8	5/ 7.6
			550~600V	3/ 3.9	5/ 6.1
	AC3 (HP/A)	Continuous Current (Ith) AC1 (A)		20	20
		Rated insulation voltage (V)		AC660	AC660
NEMA				00	00
Auxiliary Contact	IEC 60947-5-1 EN 60947-5-1 GB14048.4	Contact	Standard	1NO	1NO
			Special	1NC	1NC
			220V	3.3	3.3
			380V	1.9	1.9
	AC 15	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		-	-	

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

Coil Specification Table

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

Magnetic Contactor / Motor Starter ◆ DC control

						
Type	Magnetic Contactor	Nonreversing		SD-P11	SD-P16	SD-P21
		Reversing		SD-2×P11	SD-2×P16	SD-2×P21
	Motor Starter	without enclosure	Nonreversing	MDO-P11	MDO-P16	MDO-P21
			Reversing	MDO-2×P11	MDO-2×P16	MDO-2×P21
		with enclosure	Nonreversing	-	-	-
			Reversing	-	-	-
		with enclosure (push button)	Nonreversing	-	-	-
			TOR		Standard	TH-P12
			Differential	TH-P12PP	TH-P20PP	TH-P20PP
	Rated Capacity	IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660 AC 3 (kW/HP/A)	3 ø	240V	3.5/ 4.5/ 13	4.5/ 6/ 18
380/440V				5.5/ 7.5/ 12	7.5/ 10/ 18	11/ 15/ 21
550V				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	30	32	
UL 508 CSA-C22.2 AC3 (HP/A)		1 ø	110~120V	0.5/ 9.8	1/ 16	2/ 24
			220~240V	2/ 12	3/ 17	3/ 17
		3 ø	220~240V	3/ 9.6	5/ 15.2	7.5/ 22
			440~480V	7.5/ 11	10/ 14	15/ 21
			550~600V	10/ 11	10/ 11	15/ 17
		Continuous current (Ith) AC1 (A)		24	30	35
NEMA			0	0	1	
Auxiliary contact			1NO or 1NC	1NO 1NC	1NO 1NC	
Control coil voltage DC (V)			12/ 24/ 30*/ 48/ 72/ 110/ 125/ 220			
Electrical Life AC3 (10 thousand)			120	120	120	
Mechanical Life (10 thousand)			600	600	600	
Magnetic Contactor	Weight (kg)		0.33	0.37	0.38	
	Appearance Dimensions (W×H×D) (mm)		43×81×83.5	53.5×81×83.5	53.5×81×83.5	
	Installation Dimension (mm)					
	Mechanical Interlock			MPU-11	MPU-11	MPU-11

*Note: control circuit voltage 30V can be customized.

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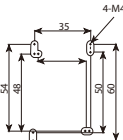
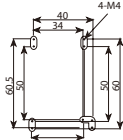
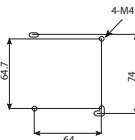
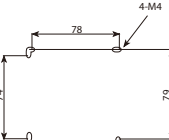
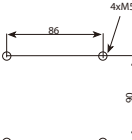
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Capacitor Contactors



Type				SC-P12	SC-P16	SC-P20	SC-P25	SC-P33	SC-P45	SC-P60	
Rated Insulation voltage (Ui)		(V)		690	690	690	690	690	690	690	
Rated Capacity	IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660 AC 3 (kW/HP/A)	AC-6b 3 Ø (kVar/A)	200~240V	6.7/ 18	8.5/ 22	10/ 26	15/ 39	20/ 48	25/ 66	35/ 92	
			400~440V	12.5/ 16	16.7/ 22	20/ 26	25/ 33	33.3/ 44	45/ 59	60/ 86	
			AC 525V	14/15	18/20	23/25	28/31	38/42	48/53	72/79	
			660~690V	18/ 15	24/ 20	30/ 25	36/ 30	48/ 40	58/ 49	75/ 63	
	Continuous current (Ith) AC1 (A)			20	30	40	50	80	90	100	
Auxiliary Contact			2NO or 1NO 1NC	2NO 1NC	2NO 1NC	3NO 2NC	3NO 2NC	3NO 2NC	3NO 2NC		
Auxiliary Contact	IEC 60947-5-1 EN 60947-5-1	AC12 (A)	100~120V	6	6	6	6	6	6	6	
			200~220V	5	5	5	5	5	5	5	
			380~440V	3	3	3	3	3	3	3	
			550~600V	3	3	3	3	3	3	3	
	Continuous current (Ith) (A)			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	
Operation frequency		(time/ hour)		240	240	240	240	240	240	100	
Capacitor unit				AP-40 A	AP-40 A	AP-40 A	AP-40 B	AP-40 B	AP-40 B	AP-40 B	
Magnetic Contactor	Weight		(kg)		0.42	0.47	0.47	0.63	1.14	1.14	1.59
	Appearance 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
	Installation Dimension		(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

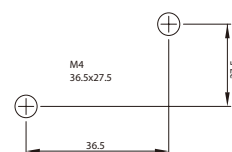
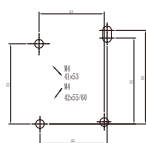
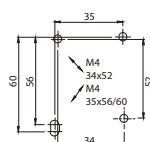
Thermal Overload Relay



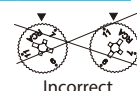
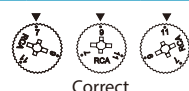
Type		12		18		20			
Standard #3	Contactor Assembled Type	TH-P12E		TH-P18E		TH-P20E		TH-P20ETA	
	Separate Installed Type	TH-P12ER		TH-P18ER		-		-	
Differential type #3	Contactor Assembled Type	TH-P12PP		TH-P18PP		TH-P20PP		TH-P20TAPP	
	Separate Installed Type	TH-P12PPR		TH-P18PPR		-		-	
Reset Mode		Manual / Automatic		Manual / Automatic		Manual / Automatic			
Magnetic Contactor		S-P09T, S-P11, S-P12T, S-P12, S-P15.		S-P16, S-P21		S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T.		S-P25, S-P30T, S-P35T, 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-P12(PP): 45.5×55.5×78 TH-P12(PP)R: 47×71×86.2		53.5×55.5×78.5		TH-P20(PP): 64.5×46.1×80		TH-P20TA(PP): 64.5×56.2×80	

Installation Dimensions (mm)

TH-P12(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.



Magnetic Control Relays



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

Definite Purpose Magnetic Contactor | SF Series

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



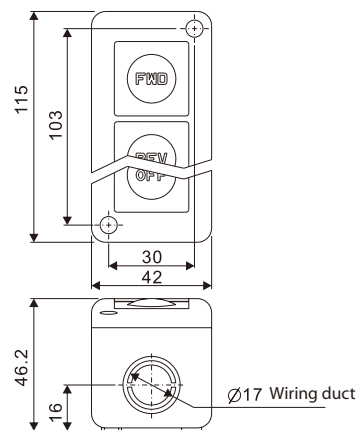
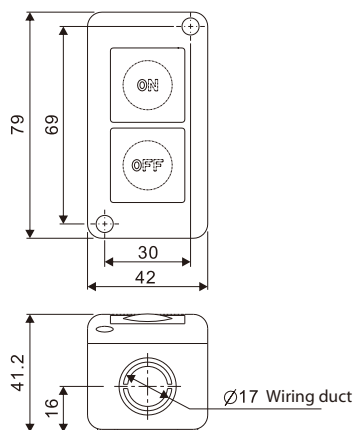
Star-delta Starter

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

Push Button | PB Series

Type	PB2	PB3
Contact schema		

External dimensions (mm)



WET.

72.5g

110g

Separate Mounting Unit



Auxiliary Contact Block

◆ AP Series



Installation		2P FRONT MOUNTED TYPE						4P FRONT MOUNTED TYPE						
Model		AP-20	AP-11	AP-02	AP-20N	AP-11N	AP-02N	AP-40	AP-31	AP-22	AP-40N	AP-31N	AP-22N	AP-13N
Contact		2NO	1NO 1NC	2NC	2NO	1NO 1NC	2NC	4NO	3NO 1NC	2NO 2NC	4NO	3NO 1NC	2NO 2NC	1NO 3NC
Applicable contactor		SR-P40, SR-P50 S-P09T~ S-P80T SD-P11~ SD-P21			S-P100E S-P630T~ S-P1260T			SR-P40, SR-P50 S-P09T~ S-P80T SD-P11~ SD-P21			S-P100E 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-P09T~ 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-P09T S-P12T	S-P11 S-P15	S-P12	S-P16 S-P21 S-P25 S-P30T S-P32T	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 Capacity (VA)	Impulse	25	55	55	55	55	72	250	319	370	440	700	1400	1400
	Operation	5	11	11	11	11	12	28	36	42	50	50	32	32
Power Consumption (W)		1.6	2.5	2.5	2.5	2.5	3	7	11	10	12	7	5	5
Operation Vot. (Ue)	On	55~70%	55~68%	55~68%	55~68%	59~70%	60~75%	63~75%	65~75%	75~80%	75~80%	65~80%	65~80%	65~80%
	Off	35~50%	34~48%	34~48%	34~48%	36~52%	40~57%	40~57%	40~55%	40~55%	40~60%	20~50%	20~50%	20~50%
Close Time (ms)	Aux. OFF	5-12	6~14	5-12	4-11	6-14	6-13	6-13	18-28	9-20	10-19	22-37	40-58	40-58
	Aux. ON	6-15	10~18	10-18	10-18	10-18	12-20	12-20	22-32	15-24	17-25	25-40	40-60	40-60
	Contact ON	6-15	10~18	10-18	10-18	10-18	12-20	12-20	22-32	10-20	12-27	30-45	42-62	46-66
Open Time (ms)	Aux. OFF	6-15	9~19	12-20	9-18	9-19	10-17	10-17	50-100	9-18	10-20	40-60	65-85	65-85
	Aux. ON	5-12	6~15	8-15	4-13	6-14	5-12	5-12	48-98	7-15	7-18	31-51	63-83	63-83
	Contact ON	5-12	8~15	8-15	4-13	6-14	5-12	5-12	46-96	7-15	7-20	30-50	65-85	65-85

Coil Specifications Table

◆ S-P09T~S-P25, S-P30T~P220T, SR-P40~P80, SC-P12~P60						
Description	AC12V	AC24V	AC48V	AC110V	AC120V	AC220V
Coil rated specifications marking	12V 50Hz 12V 60Hz	24V 50Hz 24V 60Hz	48~50V 50Hz 48~50V 60Hz	100V 50Hz 100~110V 60Hz	110~120V 50Hz 115~120V 60Hz	200~220V 50Hz 220V 60Hz
Description	AC230V	AC240V	AC380V	AC440V	AC480V	AC550V
Coil rated specifications marking	230V 50Hz 230V 60Hz	220~240V 50Hz 240~260V 60Hz	346~380V 50Hz 380V 60Hz	400V 50Hz 400~440V 60Hz	415~440V 50Hz 460~480V 60Hz	500V 50Hz 500~550V 60Hz

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

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

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

Selection Table ◆ Direct On-Line Starter

Motor rated capacity kW (HP)		3 ø 200V~220V																
		Heating element rating (A)		Selection of the contactor														
0.016	(1/47)	0.13A	0.1~0.16A	S-P06	S-P09													
0.025	(1/30)	0.2A	0.16~0.24A															
0.04	(1/19)	0.32A	0.24~0.4A															
0.09	(1/8)	0.5A	0.4~0.6A															
0.12	(1/6)	0.8A	0.6~1.0A															
0.25	(1/3)	1.3A	1.0~1.6A															
0.37	(1/2)	2.0A	1.6~2.4A															
0.75	(1)	3.2A	2.4~4.0A															
1.1	(1 1/2)	5A	4.0~6.0A															
1.5	(2)	7.5A	6.0~9.0A	S-P11, S-P12	S-P15, S-P16									S-P21	S-P25	S-P30T	S-P35T	S-P40T
0.03	(1/25)	0.25A	0.19~0.31A															
0.05	(1/15)	0.4A	0.3~0.5A															
0.1	(1/8)	0.6A	0.45~0.75A															
0.15	(1/5)	0.9A	0.7~1.1A															
0.2	(1/4)	1.2A	0.9~1.5A															
0.3	(2/5)	1.7A	1.3~2.1A															
0.4	(1/2)	2.1A	1.6~2.6A															
0.75	(1)	3.3A	2.5~4.1A															
1.1	(1 1/2)	4.4A	3.4~5.4A															
1.5	(2)	6.5A	5~8A															
2.2	(3)	9A	7~11A															
3	(4)	11A	9~13A															
3.7	(5)	15A	12~18A															
5.5	(7 1/2)	21A	17~24A															
6.5	(8 1/2)	28A	22~34A															
7.5	(10)																	
9	(12 1/2)	33A	28~38A															
11	(15)	40A	32~48A															
15	(20)	54A	43~65A															
19	(25)	67A	54~80A															
22	(30)	80A	60~100A															
25	(35)																	
30	(40)	105A	80~130A															
37	(50)	130A	100~160A															
45	(60)	160A	120~200A															
55	(75)																	
65	(85)	200A	150~250A															
75	(100)	260A	200~320A															
90	(125)																	
110	(150)	350A	260~440A															
132	(180)																	
160	(220)	500A	400~600A															

M-600C

M-600C

Motor Starter

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Selection Table ♦ λ-Δ Starter

Heater selection table (A)	Motor output kW (HP)				TH selection of λ-Δ Starter																	
	A		B		21		35		50		60		80		100		125		150		220	
	200~220V		380~440V		A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
6.5	1.5	(2)	3	(4)	TH-P20	TH-P20																
9	1.9	(2 1/2)	3.7	(5)																		
9	2.2	(3)	4.5	(6)																		
11	3	(4)	5.5	(7 1/2)																		
15	3.7	(5)	7.5	(10)																		
15	4.5	(6)	10	(13)																		
21	5.5	(7 1/2)	11	(15)																		
28	6.5	(8)	14	(19)	TH-P20TA	TH-P20TA	TH-P60	TH-P60	TH-P60	TH-P60	TH-P120	TH-P120	TH-P120	TH-P120	TH-P120	TH-P120	TH-P220T	TH-P220T	TH-P220T	TH-P220T	TH-P400T	TH-P400T
28	7.5	(10)	15	(20)																		
33	9	(12 1/2)	19	(25)																		
40	11	(15)	22	(30)																		
40	14	(19)	26	(35)																		
54	15	(20)	30	(40)																		
67	19	(25)	37	(50)																		
80	22	(30)	45	(60)			TH-P60TA	TH-P60TA	TH-P120	TH-P120	TH-P120	TH-P120	TH-P120	TH-P120TA	TH-P120TA	TH-P120TA	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	TH-P120TA	TH-P120TA	TH-P220T	TH-P220T	TH-P220T	TH-P220T	TH-P400T	TH-P400T
130	37	(50)	75	(100)							TH-P120TA	TH-P120TA	TH-P120TA	TH-P120TA	TH-P120TA	TH-P120TA	TH-P220T	TH-P220T	TH-P220T	TH-P220T	TH-P400T	TH-P400T
160	45	(60)	90	(125)									TH-P120TA	TH-P120TA	TH-P120TA	TH-P120TA	TH-P220T	TH-P220T	TH-P220T	TH-P220T	TH-P400T	TH-P400T
200	55	(75)	110	(150)											TH-P120TA	TH-P120TA	TH-P220T	TH-P220T	TH-P220T	TH-P220T	TH-P400T	TH-P400T
200	65	(85)	132	(200)													TH-P220T	TH-P220T	TH-P220T	TH-P220T	TH-P400T	TH-P400T
260	75	(100)	150	(200)															TH-P220T	TH-P220T	TH-P400T	TH-P400T
350	110	(150)	200	(260)																	TH-P400T	TH-P400T

Modular Contactor



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

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

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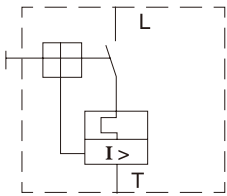
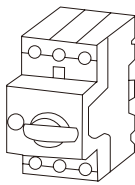
MCB

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MS

MMS

MANUAL MOTOR STARTER



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

Side AX (MR-AN)

Front AX (MR-AE)

SHT (MR-AS)

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

UVT (MR-AU)

MMS

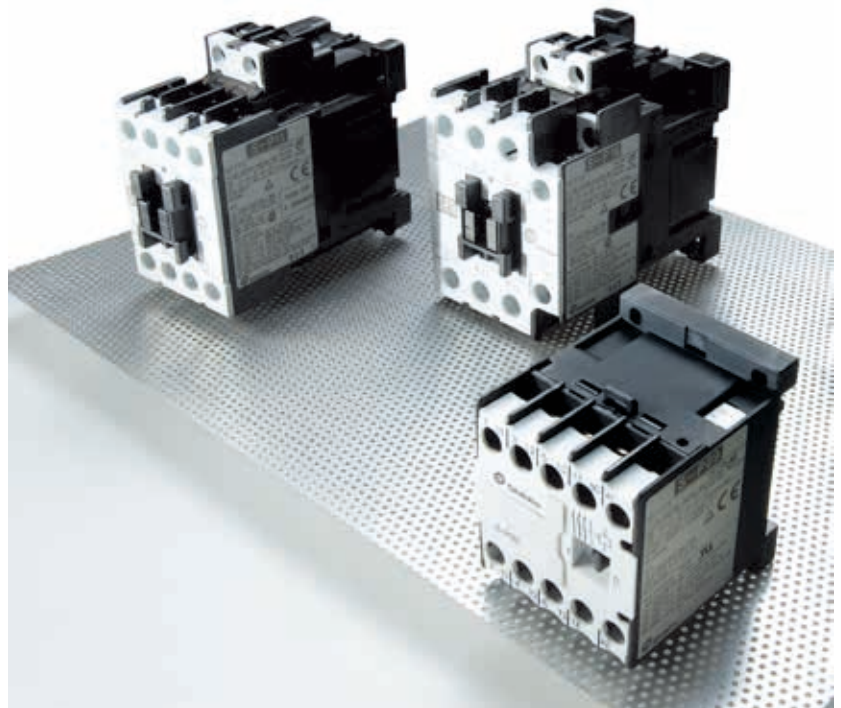


CIRCUIT BREAKER (MCCB / ELCB / EMCCB / MCB)

Breaker & Switchgear System



AIR CIRCUIT BREAKER



MAGNETIC CONTACTOR / SWITCH (CONTACTOR / MS / MMS)



AUTOMATIC TRANSFER SWITCHES



SURGE PROTECTIVE
DEVICE



SMART METER



INVERTER



LOW VOLTAGE
POWER CAPACITORS

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MAGNETIC CONTACTOR / SWITCH (CONTACTOR/ MS/ MMS), CIRCUIT BREAKER (MCCB/ ELCB/ EMCCB/ MCB), AIR CIRCUIT BREAKER, AUTOMATIC TRANSFER SWITCHES, SURGE PROTECTIVE DEVICE, SMART METER, LOW VOLTAGE POWER CAPACITORS, INVERTER



Breaker & switchgears overseas sales dept.

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

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

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

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

Headquarters

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

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